Chameleon Information Management Services Limited

InfoFlex v5
User Management and Audit Trail
User Guide

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1 Purpose of this document

The purpose of this document is to provide an InfoFlex system manager with the information needed to set up and maintain User Management. The sections which will be covered are:

- User creation
- Group Membership
- Security / System Policies
- General user maintenance
- Using the Audit Trail

2 About User Management

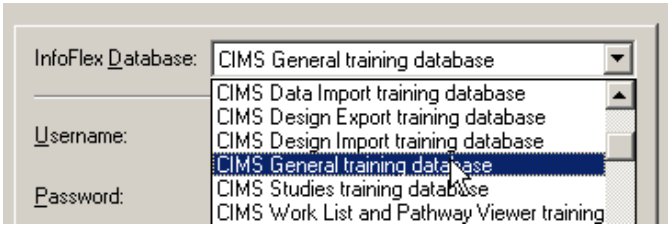
The User Management module is used for creating users and for controlling system and account policies within InfoFlex. These policies enable tight control over users' accounts and enhance the security of InfoFlex. The functionality is divided into 2 distinct areas: Individual user settings and System-wide policies.

Individual user settings determine which users can login to a database, their passwords, and what permissions they have to read, change and delete information in InfoFlex. A user's permissions can be set individually or for ease of administration, a user can be assigned to a group. Permissions which are defined for a group will be applied to all users within the group.

System-wide policies apply to all users of an InfoFlex database. Different databases can have different policies. Policies can be defined for passwords, for account lockout and for further system policies. All system-wide policies are initially undefined, or in the case of the auditing and synchronisation, turned off. To be effective, a policy must be defined, and a value set. Policies are effective after restarting InfoFlex and users will see the effects of changes to user management settings the next time they Login.

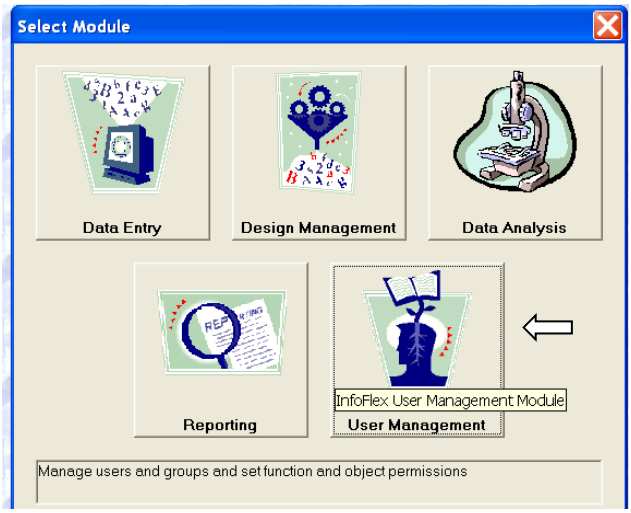
3 Getting started

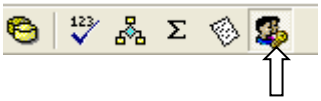
This exercise uses the **CIMS General training database**.



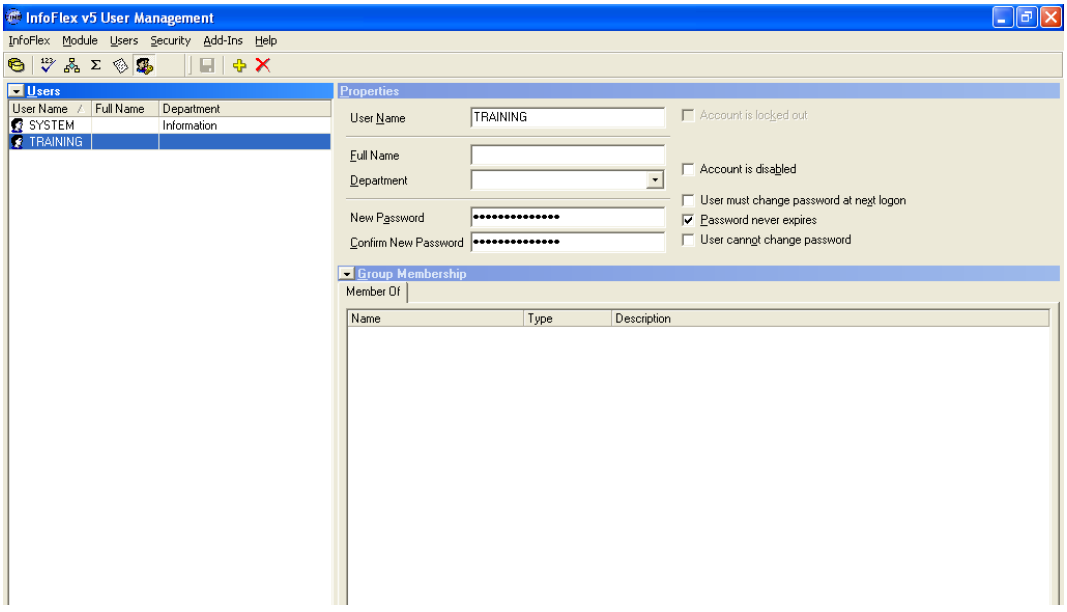
The Username is **training** and the Password is **training**.

Login to the database and go to the User Management module.





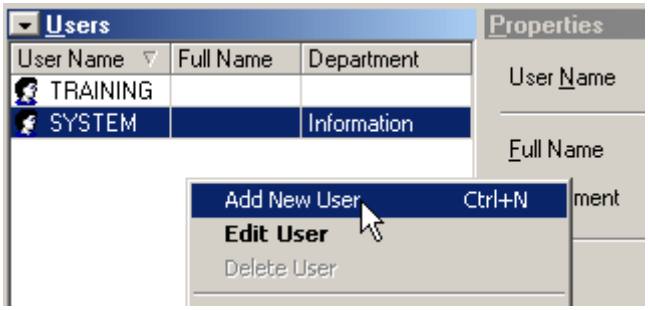
Once you have selected User Management, the module will open.



4 Creating a user

Adding a new user can be done in one of three ways:

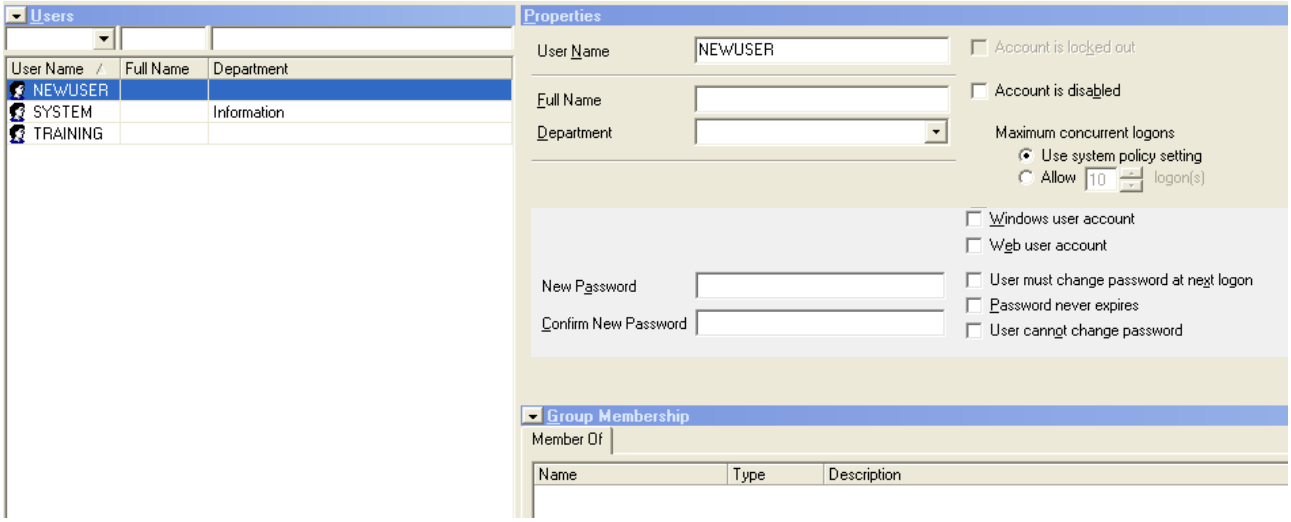
From the toolbar

Right clicking under the Users section 

Or from the **Users** menu

After pressing **Add New User**, the screen will not change but the fields under Properties will go blank. When you create a new user, the default username the system gives you is NEWUSER. You can delete this to add your desired user name. See image below.

When adding your user, fill-in all the available fields including the department field. If you scroll through the list of departments and cannot see the one the user belongs to, you can add it by typing in this field.



Enter a password and verify it by entering it again. As a security precaution, it is suggested that the user be required to change their password as soon as they log in for the first time. This can be accomplished by ticking the **User must change password at next logon** option.

4.1 User settings

These properties can be set on an individual user's account. They are available to the right of the **User Name** and **Password** fields.

Account is locked out
The account will be locked if the user has tried to log in with the wrong password too many times. If the account is NOT locked, the setting is disabled. If the account is locked out, the administrator can unlock it by unticking the setting.

Account is disabled
If this is set, the user cannot logon.

Maximum concurrent logons
A system policy controls how many logons that the same user can have on different PCs. (See section 6.3 below). If you wish to set a different number for this user (whether higher or lower), then select **Allow** and enter a value between 1 and 10. The **System** user is excluded from this policy.

Windows user account
This setting allows the user to use the username/password from their Windows logon. When certain conditions are met, a user marked as a **Windows user account** can login to InfoFlex without supplying a password, because they have already logged onto their Windows Domain. This is not a normal InfoFlex user account and the user does not have an associated InfoFlex password. See section 7 below for full details.

Web user account
This setting signifies that the user has permissions to log onto InfoFlex through a web portal. See section 5.1.1 for details on how to set group actions for web users and section 7.2.1 for windows users with web access.

User must change password at next logon
If this is set, the user will be required to change their password the next time they logon. If they cancel their Change Password dialog box, they will not be allowed to logon.

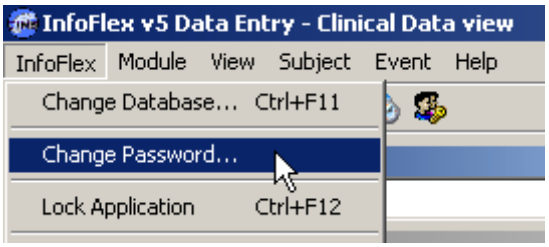
Password never expires
If this is set, the user's password never expires. This does not prevent them from changing their password from within InfoFlex.

User cannot change password
If this is set, the user cannot change their password from within InfoFlex. Their password can still be changed in User Management.

Notes:

1. There are 2 combinations of settings that counteract each other and therefore are not allowed to be used together. These are:
    a) **User must change password at next logon** and **Password never expires**, and
    b) **User must change password at next logon** and **User cannot change password**.

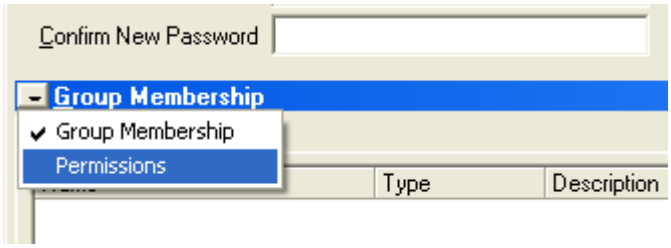
2. A user can change their password from within InfoFlex at any time by going to the InfoFlex menu and choosing **Change Password**.



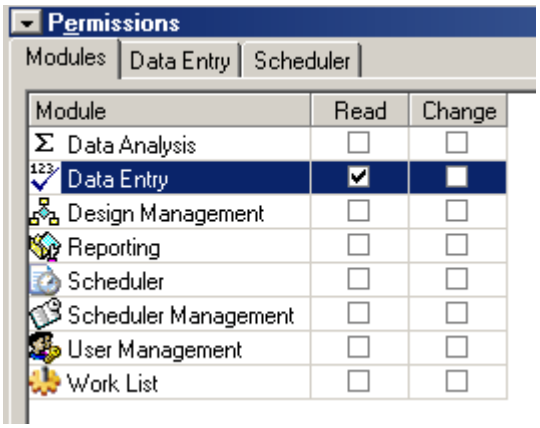
4.2 Setting user account permissions

When creating a user, you can set what access permissions they have to Domains / Data Views or modules. This can be done via the permissions option.

To see the permissions, select the down arrow next to **Group Membership** and choose **Permissions**.



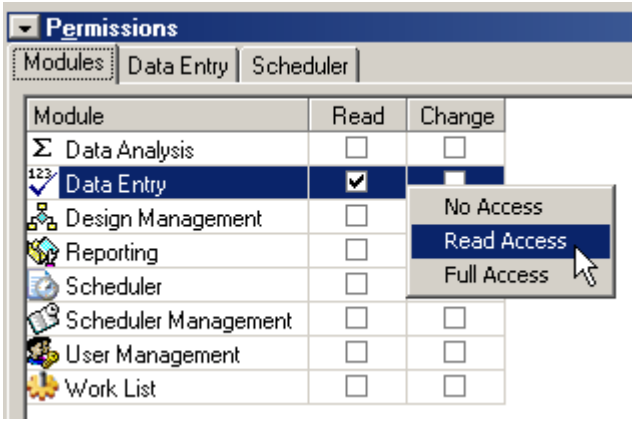
This will display permissions which can be set for your current user.



Modules tab

From here you can set which modules within InfoFlex the user can have access to. If you don't select **Change**, the user will have Read-Only permissions to that module

These options can either be set by clicking the check boxes, or by right clicking and choosing the desired option.



There are 3 levels of access available. No Access, Read Access and Full Access.

No Access is indicated by both checkboxes being clear. The user is unable to access the module.

Read Access allows the user to access the module, but only view the available information. This is indicated by the **Read** box being checked.

> Note that the Read Only option does not apply Design Management – users any permission to use Design management have full access to all domains and data views.
>
> Also the Read Only option does not prevent users from generating reports in the Reporting module.

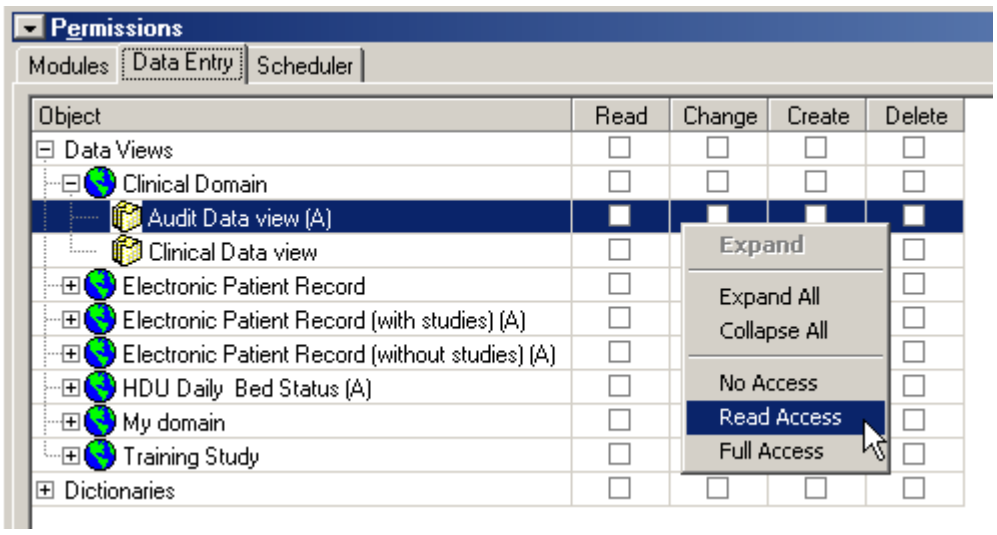
Full Access allows access to the module, with the option to add and delete information. This is indicated by both boxes being checked

Note that permission to use domains and data views must also be granted on the Data entry tab.

Data Entry tab

Here you can select which Data Domains, Data Views or Dictionary Domains the user has access to. The domains and data views you grant access to here are visible in all modules that the user has access to. Note that the specific levels of permission on this tab apply to the Data Entry and Work List modules only.

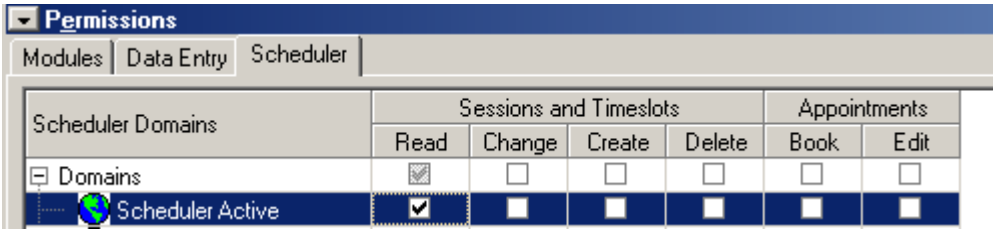
There are four permission levels for Data Entry and Work List. These are Read, Change, Create and Delete. The permission level can also be set by right clicking and selecting No Access, Read Access or Full Access.



Note that the tightest level of security always applies across the **Data Entry** and **Modules** tabs. For example if you grant full access to a domain or data view on the **Data Entry** tab and read only access on the **Modules** tab, then read only access applies. Similarly if you grant full access on the **Modules** tab and only read access to a domain on the **Data Entry** tab, then Read access applies.

Scheduler tab

The Scheduler tab controls permissions required for the Scheduler module. Please see the Scheduler user guide for details.



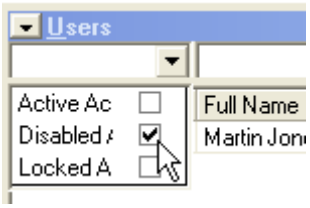
4.3 Saving changes to user accounts

To save the settings press **<f5>,** choose **User** and **Save** or press the Disk icon on the toolbar. The changes you have made are only effective when the user details are saved. Changes made are only applied to the user the next time the user logs into InfoFlex.

4.4 Managing the list of users

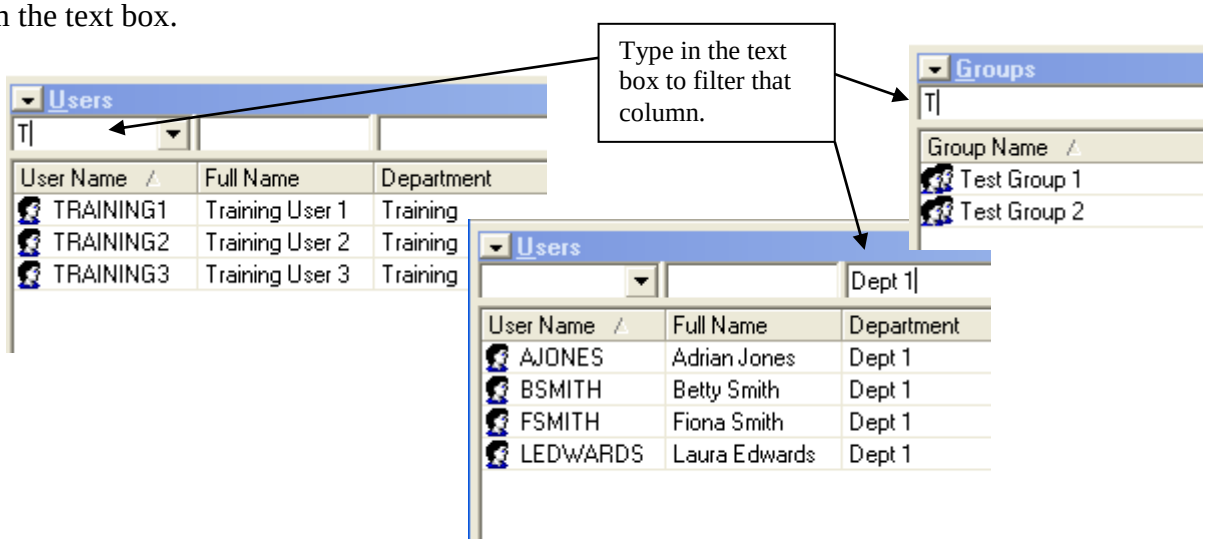
4.4.1 Filtering the users

The dropdown in the first cell allows you to filter the users by Active, Disabled or Locked users. Press the dropdown arrow to display the filters. By default, all 3 options are ticked. Tick or untick the check boxes to apply the filters. The Users list is filtered immediately. To hide the filters, click the dropdown arrow again or click away from the filters.



The Users list can also be filtered by typing in any of the 3 text boxes at the top of the users list.

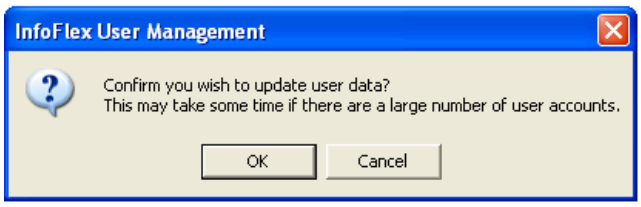
Type in any of the text boxes and the list is immediately filtered. To clear the filter, delete the text from the text box.



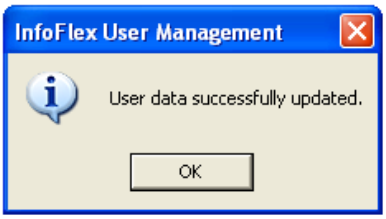
4.4.2 Updating user data

In InfoFlex version 5.50.0100, the User tables were updated. If any users were added or locked out using earlier versions of InfoFlex after the database was updated, the user data will be incomplete. The user data can be updated by choosing the **Update User Data** option on the Users menu.

Selecting the menu item shows a confirmation message:


InfoFlex User Management
Confirm you wish to update user data?
This may take some time if there are a large number of user accounts.
OK
Cancel

After the update has run, a further message is displayed:

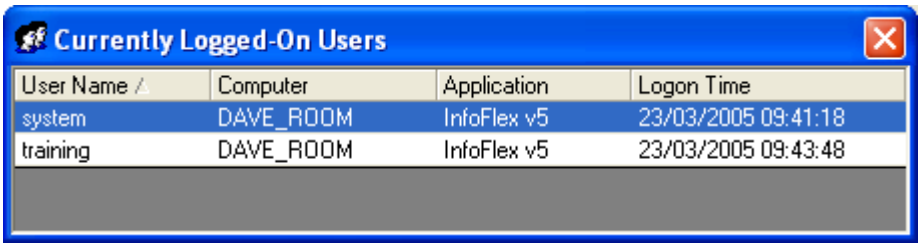


If any earlier clients have access to user management, or may have locked out their InfoFlex account, it is necessary to use this menu item to ensure the data visible in user management is up to date.

4.5 Showing all current logons

In InfoFlex, you have the facility to see all users who are currently logged onto the system. You can access this functionality by **Users** > **View Current Logons…**

When the Currently Logged-on Users window open, you can see all users who are using InfoFlex and what PC they are working from.

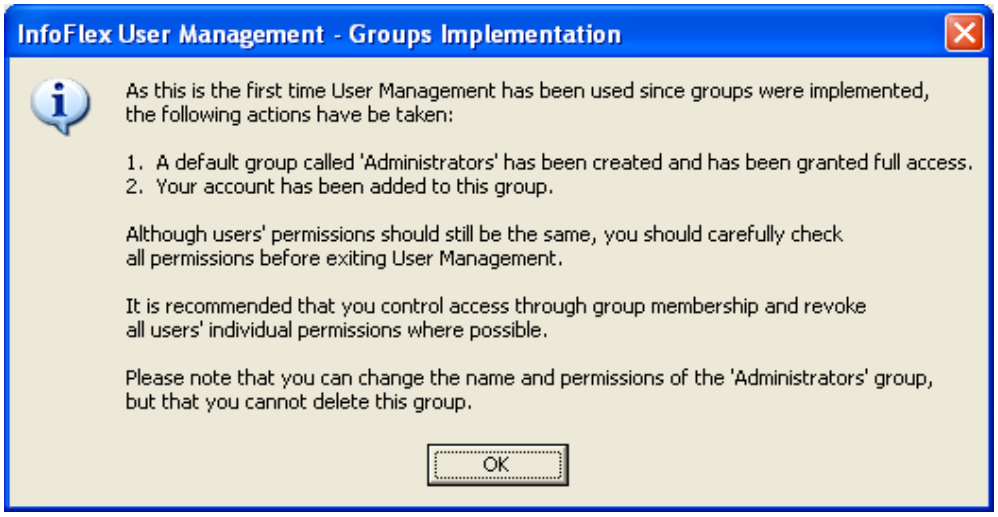


If you right click on a user from this window, you will have 3 options available to select: You can either **clear all logons** - clear all users who are using InfoFlex; or you can just clear a single user. The options are not available for your own logon. Clearing logons is intended to remove logons that have been left on the system if InfoFlex was terminated abnormally. It does not stop an existing logged on user from continuing to use InfoFlex.

5 User Groups

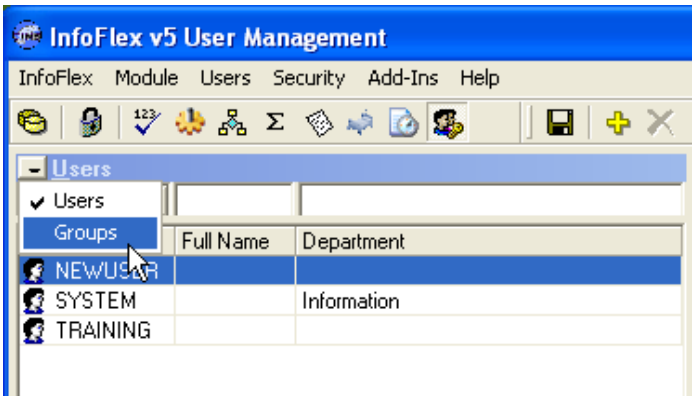
The User Management module in InfoFlex now allows the creation of User Groups. User Groups allow the control of access and permissions within InfoFlex to be applied to a group of users rather than just to individual users.

The first time the User Management module is used on a database, the following message appears:

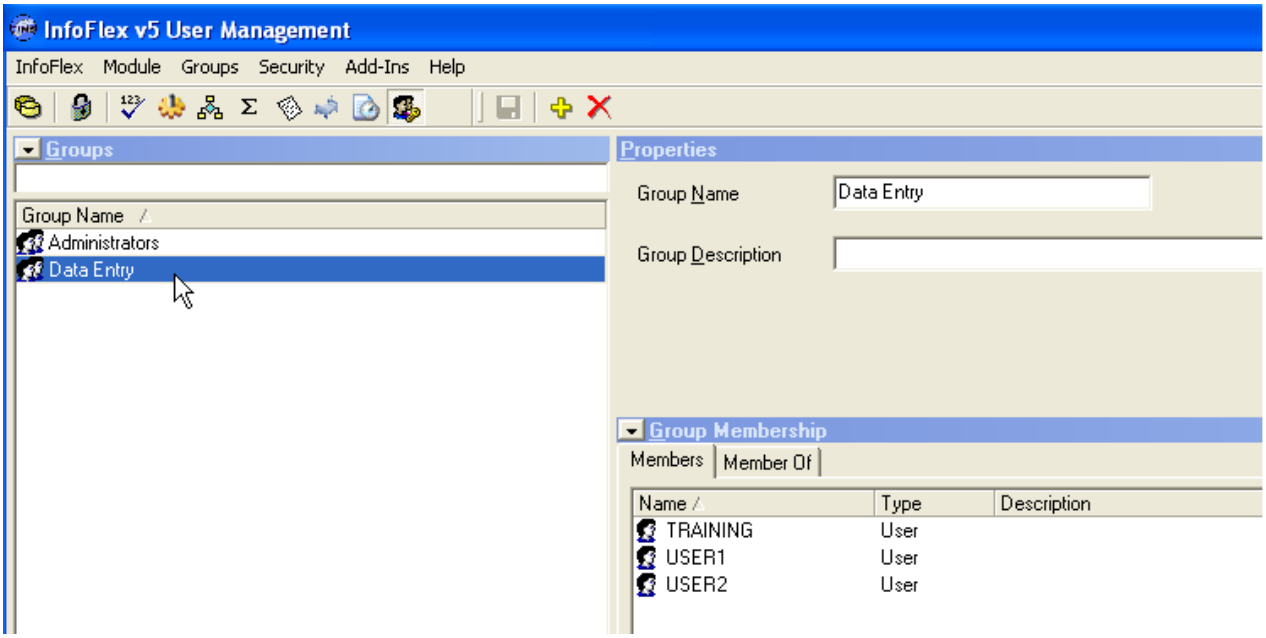

InfoFlex User Management - Groups Implementation
As this is the first time User Management has been used since groups were implemented, the following actions have be taken:
1. A default group called 'Administrators' has been created and has been granted full access.
2. Your account has been added to this group.
Although users' permissions should still be the same, you should carefully check all permissions before exiting User Management.
It is recommended that you control access through group membership and revoke all users' individual permissions where possible.
Please note that you can change the name and permissions of the 'Administrators' group, but that you cannot delete this group.
OK

5.1 Viewing User Groups

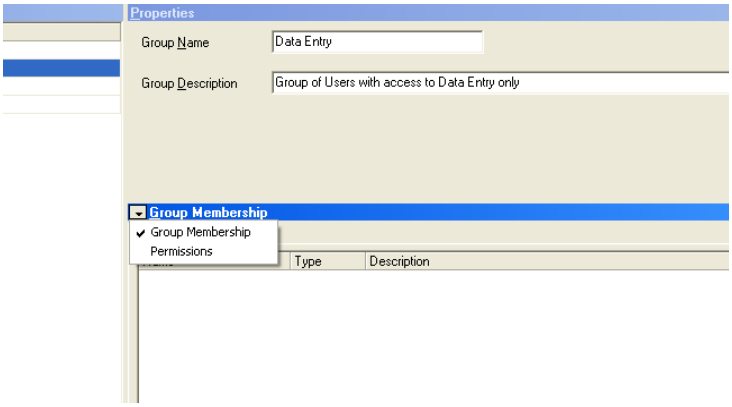
Select the User Management module in InfoFlex. Click on the dropdown list in the left-hand pane of the User Management module. This will allow toggling between the view showing **Users** and the one showing **Groups**. To view User Groups, select **Groups**.



The groups are listed by their name. Selecting a group will display the name and description of that group and display the permissions set for the group and the group membership.



The lower pane on the right-hand side shows the group membership and the permissions. Selecting the arrow next to **Group Membership** gives you a dropdown list that allows you to toggle between the view showing **Permissions** and the one showing **Group Membership**.



The Permissions view has two tabs, one for controlling the group's access to the modules of InfoFlex, and the other setting the permissions at the Domains, Data Views and Dictionaries level. These are used in the same way as for individual users.

The Group Membership has two tabs. The **Members** tab shows which users are members of this group. It also shows whether any other group is a member of this group. The **Member of** tab shows whether this user group is a member of any other groups.

5.1.1 Group actions

Group actions are applied to all the members of a group (with some exceptions detailed below) **after** the group is saved.

Group Actions
These actions can be performed on all the users in the group and will take effect when the group is saved.
The action checkboxes and text fields are cleared automatically on save.
Note that the 'system' account is always excluded from group actions.
Set Web User
Set Password
Clear Web User
All Accounts?
Password
Confirm Password

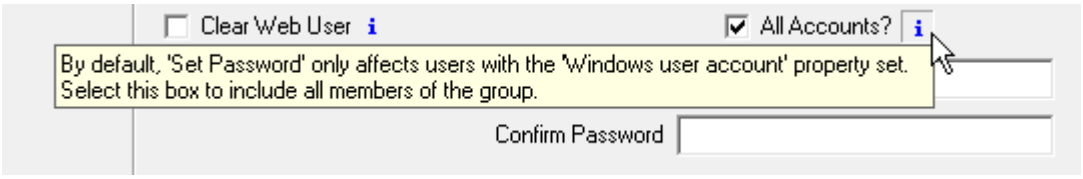
1. **Set Web User** Sets the **Web user account** property for all users in the group.

2. **Clear Web User** Clears the **Web user account** property for all users in the group.

3. **Set Password** Sets/Clears the entered password for all **Windows user account** members of the group. Also sets the 'User must change password at next logon' property.The Password must conform to policies. See information from the ***i*** button. The action is restricted to just the Windows user account members of the group, as the other InfoFlex users already have a password.

Set Web User
Set Password
Sets the entered password for all 'Windows user account' members of the group.
The password must conform to current password policies.
Also sets the 'User must change password at next logon' property.

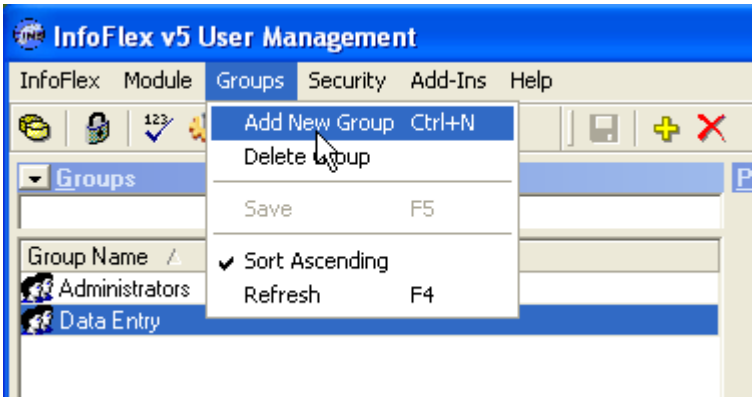
4. All Accounts? Setting/Clearing the password can be extended to all the InfoFlex users in the group, rather than just the **Windows user account** members.


Clear Web User
All Accounts?
By default, 'Set Password' only affects users with the 'Windows user account' property set.
Select this box to include all members of the group.
Confirm Password

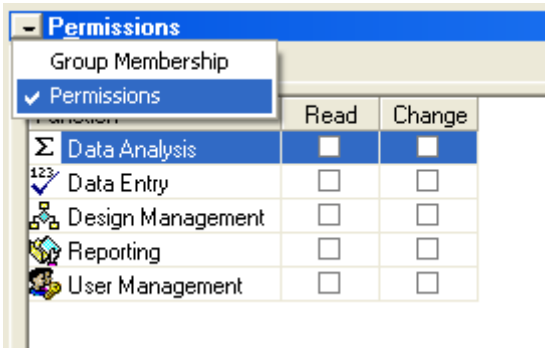
5.2 Adding a New User Group

To add a new group, first select the **Groups** view in the left-hand pane in the User Management module.

Select the **Add New Group** item from the **Groups** menu. A new group can also be added by clicking on the Add button on the toolbar or selecting the **Add New Group** item from the right-click menu in the Groups pane. Edit the name and description of the group.



The Permissions for the group can be set by selecting the **Permissions** view in the lower right-hand pane and choosing the access and permissions for the new group.



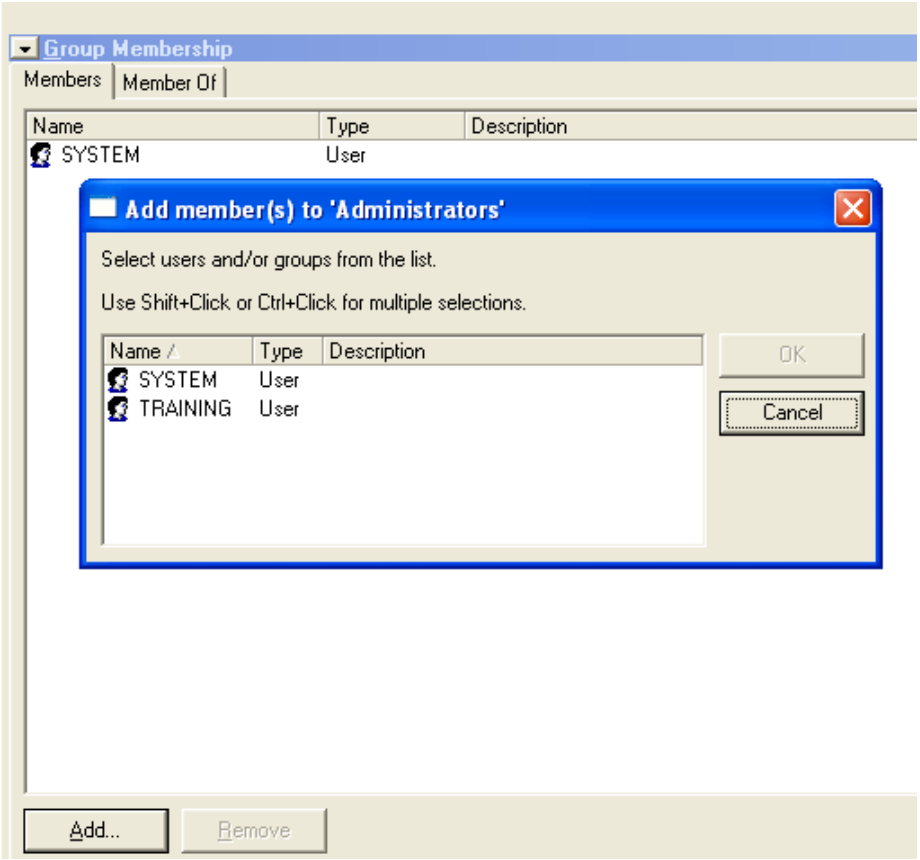
Save the group using the Save button on the toolbar. Alternatively you can save by pressing the F5 function key, or select **Save** in the **Groups** menu or from the right-click menu in the Groups pane.

A group can be removed by clicking on a group in the **Groups** view and selecting the **Delete Group** item from the **Groups** menu or selecting the delete button from the toolbar or the **Delete Group** item from the right-click menu. The Administrators group cannot be deleted, although it is possible to change its name and permissions.

5.3 Adding and Removing the Members of a Group

To add existing users to a group, select the **Groups** view in the left-hand pane of the User Management module. Select the group name that you wish to add members to in the grid in that pane.

Choose the **Group Membership** view of the lower right-hand pane. Click on the **Add…** button and select the users that you wish to add to the group. Alternatively select **Add…** from the right-click menu in the **Group Membership** view.



You can also select another group to be a member of this user group if you wish to create a hierarchy of groups. InfoFlex will stop you from creating a circular group membership. In other words, Group A cannot be a member of Group B if Group B is already a member of Group A.

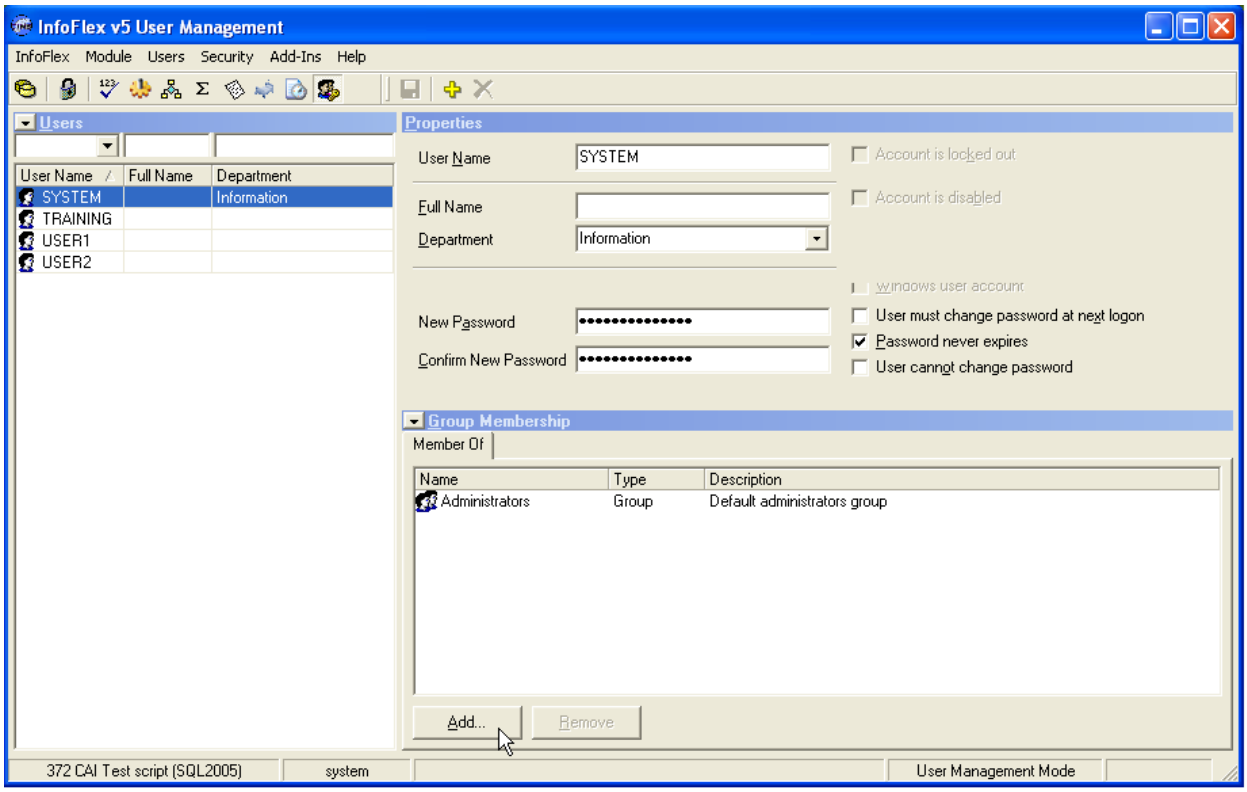
Members can be removed by clicking on a member in the Group Membership pane and pressing the **Remove** button or selecting **Remove** from the right-click menu in that pane.

The right-click menu in the Group Membership pane also provides a shortcut to viewing the details of a group or user listed in that pane. If a group is selected, the right-click menu gives the option **Show Group Details**. By selecting this option, the current view in the User Management module changes to the group selected. If a user is selected the option is **Show User Details**. Selecting this option changes the current view to show all the details of the user selected.

5.4 Modifying which Groups a User Belongs to

Users can also be added and removed from groups through the **Users** view.

Select the **Users** view in the left-hand pane of the User Management module. This will display a list of users defined for the current database. Select a user from the list. Click on the drop down list in the lower right-hand pane to toggle between **Permissions** and **Group Membership**. Select **Group Membership**, the list of groups that the user belongs to is displayed.



To add the user to a group, select the **Add…** button in the lower right-hand pane and then select the group(s) from the list displayed. To remove the user from a group, click on the group in this pane and press the **Remove** button. The right-click menu also provides this functionality.

The right-click menu in the Group Membership pane allows you a shortcut to viewing the details of a group listed in that pane. Selecting **Show Group Details** will change the current view in the User Management module to the group selected.

5.5 Individual User Permissions and Group Permissions

A user belonging to a group will have permissions that have been granted to the group as well as permissions granted to the user as an individual. The group permissions and the individual user permissions are added together. For example, suppose a user had access only to data-analysis in the user's permissions, but also belonged to a group that only had access to data-entry. The result would be that the user has access to both data-analysis and data-entry.

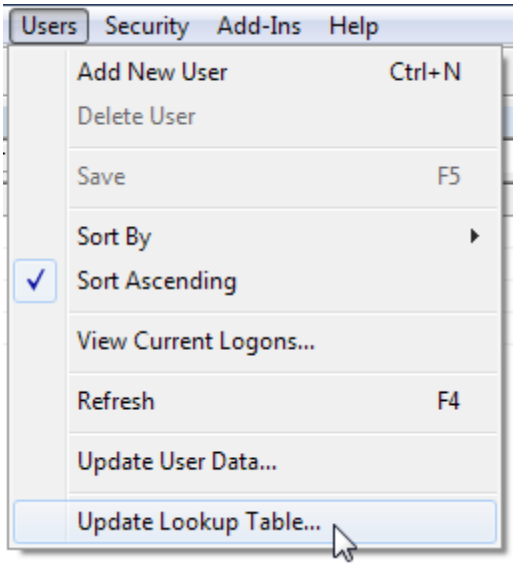
The opening screen recommends that you control access through group membership and revoke individual permissions where possible.

To revoke an individual user's permissions, select the user in the left-hand pane. Ensure that they belong to a group which has the required permissions. Select the **Permissions** view in the lower right-hand pane. Remove the ticks for both the **Functions** tab and the **Objects** tab. Save the user. The user now inherits all their access through group membership.

A user that does not belong to a group must have at least read-only access to one module.

5.6 Behind the scenes

Behind the scenes in User Management there is a lookup table which contains links between users and groups. InfoFlex keeps this table up to date unless some users or groups have been added using an earlier version of InfoFlex. A menu item (introduced in 5.60.0100) **Update Lookup Table** has been added to the **Groups/Users** menu. This item can be used to update the table if changes have been made to users or groups in InfoFlex versions earlier than 5.50.0300.

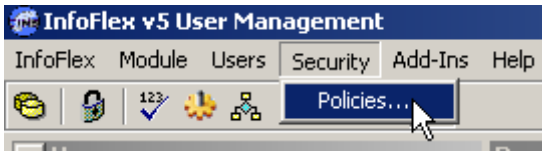


Please note CIMS recommends that all PCs are installed with the same version of InfoFlex.

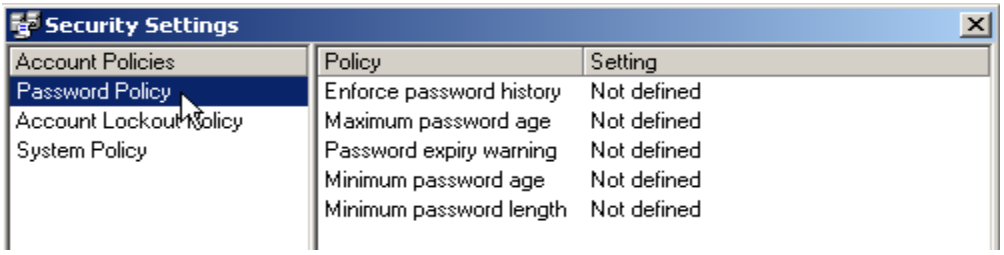
6 Setting system wide policies

System-wide policies apply to all users of an InfoFlex database. Different databases can have different policies. Policies can be defined for passwords, for account lockout and for further system policies. All system-wide policies are initially undefined, or in the case of the auditing and synchronisation, turned off. To be effective, a policy must be defined, and a value set. Policies are effective after restarting InfoFlex and users will see the effects of changes to user management settings the next time they Login.

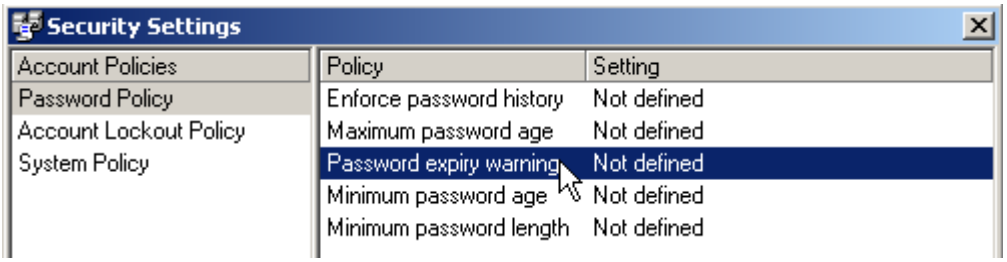
To access the system wide policies, go to the Security menu and choose **Policies**.



There are three categories of policy – Password policies, Account Lockout policies and System policies. To view the Password policies, select Password Policy in the Account Policies list.



To define an individual policy, double click the policy in the **Policy** column.



A policy definition window is displayed.

For each policy, tick the **Define this policy** check box and then enter the appropriate settings.

See sections 6.1 to 6.3 below for information about each policy.

NOTE: These policies are system-wide and database specific therefore all users with access to the particular InfoFlex database will be affected by these policies.

6.1 Password Policies

Enforce password history
This policy sets whether the system remembers users' previous passwords. If the policy is not defined, or is defined and set to 0, no passwords will be remembered. If a number greater than 0 is set, that number of passwords will be remembered. The user will not be able to set the same password again until they have used the required number of different passwords. This setting is used in conjunction with *'Minimum password age'* to set a minimum time before users can use the same password again.

Maximum password age
This policy sets the maximum time in days before a user is forced to change their password. If the policy is undefined, or defined and set to 0, users' passwords will not expire. If the value is set to a number greater than 0, users will be forced to change their password when those numbers of days have elapsed.

Password expiry warning
This policy sets the number of days before a user's password expires that a warning is given. If the policy is undefined, or defined and set to 0, no warning is given before password expiry. If a number greater than 0 is set, users will be warned in advance of their password expiring. When the warning is given, they have the choice of changing their password then, or ignoring the warning.

Minimum password age
This policy sets the minimum time in days after a password change before a user can change their password again. If the policy is undefined, or defined and set to 0, users can change their passwords immediately. If a number greater than 0 is set, they must wait the required interval before changing their password again. The policy is used in conjunction with *'Enforce password history'* to set a minimum time interval before a user can set the same password again.

Minimum password length
This policy sets the minimum number of characters in the user's password. If undefined the minimum length of password would be 1, as InfoFlex does not allow logon until at least one character has been typed in the password box. Because of this, the minimum value for the policy is 1.

Example of password policy usage:

The above policies (with the exception of *'Password expiry warning'*) work together to control password usage. For example:

Enforce password history	=	10
Maximum password age	=	30
Minimum password age	=	7

This would ensure that, in the normal cycle of password changes, a user could not set the same password for about 11 months. The shortest time before setting the same password again would be 77 days.

6.2 Account Lockout Policies

Account lockout duration
This policy sets the amount of time in minutes that a user's account will remain locked once it has been locked out. If the policy is defined and set to 0 the account remains locked until an administrator unlocks it using User Management. If a number greater than 0 is set, the account will be automatically unlocked when the user attempts to log on after the time has elapsed.

Account lockout threshold
This policy sets the number of invalid login attempts before a user's account is locked. If undefined, or defined and set to 0, accounts will not lock out. If a number greater than 0 is set, accounts will lock after the set number of invalid attempts (but see also the next policy *'Reset account lockout counter after'*).

Reset account lockout counter after
This policy sets the time interval in minutes before the number of invalid login attempts is reset to 0. If a user makes invalid login attempts up to 1 less than the lockout threshold, then waits the interval set in this policy; they could then have the same number of invalid login attempts without locking their account.

Note: The 3 account lockout policies work together and it does not make any sense to have 1 or 2 of them defined and not the others. For this reason, if you define one of these policies, the other 2 will be set with default values. Likewise, if you set one undefined, the other 2 will also be set undefined.

Example of account lockout strategy:

Account lockout duration	=	0
Account lockout threshold	=	3
Reset account lockout counter after	=	5

In this example, an account will lock after 3 invalid attempts, and the account will stay locked until an administrator unlocks it in User Management. If the user makes 2 invalid attempts, then waits over 5 minutes, they can make a further 2 attempts without locking the account, and repeat this cycle indefinitely.

6.3 System Policies

Auditing
Enabling this policy sets which domains will be audited. The default is for **no** domains to be audited. Auditing keeps a separate record of changes to data. This includes changes made in data entry, design management and user management.

Note: User changes, being database-specific rather than domain-specific, will always be audited, **but only after auditing has been enabled for at least one domain.**
For more information about Auditing, please refer to chapter 10 Audit Trail

Use Windows Authentication
This policy has been replaced by the functionality described in section 7.

Lock InfoFlex after
This policy sets the time of inactivity in minutes before InfoFlex locks and requires the user's password to be unlocked. It is the same concept as the Windows screen saver with password protection set. If the policy is undefined InfoFlex will not lock. If defined, InfoFlex will lock after the period of inactivity specified.

Maximum concurrent logons
This policy restricts the number of logons that the same user can have on different PCs. (There is no restriction on the total number of logons of different usernames. There is also no restriction on the number of logons from the same machine). If defined, the maximum number of logons can be set in a range 1-10. If undefined, there is no restriction on the number of logons

Each user can have a separate limit set. Within each user definition, the Maximum concurrent logons settings specify whether to use the system policy (default) or to set a value between 1 and 10. There are two new option buttons on the user's properties in User Management. Individual user setting of the maximum concurrent logons will always override the system policy setting, whether a greater or lesser number of logons is set.

If a user is already logged on the maximum permitted number of times, they will see a message telling them that they cannot logon. As it is possible that this warning could be incorrect (eg, if their pc crashed), there is a note in the warning telling them to contact support if they think it is wrong. The System user is able to remove stranded logons in the **Currently Logged On Users** window that is available in User Management from the **Users** menu -> **View current logons…**. The context menu on the right mouse button allows stranded logons to be removed. Note that this simply tells InfoFlex that the logon is no longer valid. It does not log off a user who is currently logged on.

Warn if already logged in
This policy sets whether users should be warned if they are already logged in at other computer(s). If the policy is enabled, users will receive a warning during logon telling them which computer(s) they are currently logged onto, but they will still be allowed to logon. The reason for disabling this policy would be when many different users use a single account. At the moment only logons to the main application are recorded, though this may change in the future.

The **Warn if already logged in** policy works in the same way, irrespective of whether the **Maximum concurrent logons** policy is set. If the latter policy is defined, users will only see the warning if their current logons (excluding the one about to happen) is less than their maximum logon limit (either system or individual).

Hide user name
When this policy is enabled, on logging into InfoFlex, the user's username is replaced by asterisks as is always the case for passwords.

Default and Maximum/Minimum Values
The following table details the default and maximum/minimum values for the system-wide policies:

Policy	Default Value	Max Value	Min Value
Enforce password history	10	24	0
Maximum password age	30	999	0
Password expiry warning	5	14	0
Minimum password age	7	999	0
Minimum password length	7	14	1
Account lockout duration	30	99999	0
Account lockout threshold	3	999	0
Reset account lockout counter after	5	99999	1
Auditing	No domains	n/a	n/a
Synchronisation	No domains	n/a	n/a
Use Windows authentication	Not defined	n/a	n/a
Lock InfoFlex after	10	999	0
Maximum concurrent logons	Not defined	1	10
Warn if already logged in	Enabled	n/a	n/a
Hide user name	Disabled	n/a	n/a

Auto-save documents after Word
When this policy is enabled, it removes the need to save the document in InfoFlex when it has already been saved in Word and reduces the number of keystrokes required after viewing or editing a document with Word. When switched on, the policy applies to all documents across the database. The policy is switched off by default.

Behaviour when the policy is enabled
When the policy is enabled, when a document has been viewed or edited with Word, the message box shown when returning to InfoFlex will always show just an OK button. This will happen whether the document is read only or editable.
On return to InfoFlex, whether the document was saved in Word or was not changed, no further prompts are shown. If the document has been changed in Word, changes are brought into InfoFlex automatically and the InfoFlex document is saved automatically.

If the document has unsaved changes made in InfoFlex and is then viewed with Word:

- If changes are made and saved in Word, the document and event will be autosaved with no prompts, and the previous changes will also be included in this save.

- If changes are made in Word and not saved, or no changes made, the document will remain unsaved in InfoFlex and the user will need to save or be prompted on navigating away from the document.

7 Logon by Windows authentication

7.1 Overview

This functionality allows login to InfoFlex using Windows account names. Windows authentication is determined on a per-user basis within a database, using a new property that can be set on the user account in User Management. Accounts that have the **Windows user account** property set are not normal InfoFlex user accounts and they do not have an associated InfoFlex password. They are designed to allow the user to use the username/password from their Windows logon. When certain conditions described below are met, a user marked as a **Windows user account** can login to InfoFlex without supplying a password, because they have already logged onto their Windows Domain.

The **System** user account cannot be defined as a Windows user account.

Windows user accounts can be set up in InfoFlex for a user with a valid Windows account on the Windows Domain. The user can log on even if they are not the Windows user currently logged onto the PC. However, the Windows password will need to be checked in this case, and the PC will need to be connected to the network.

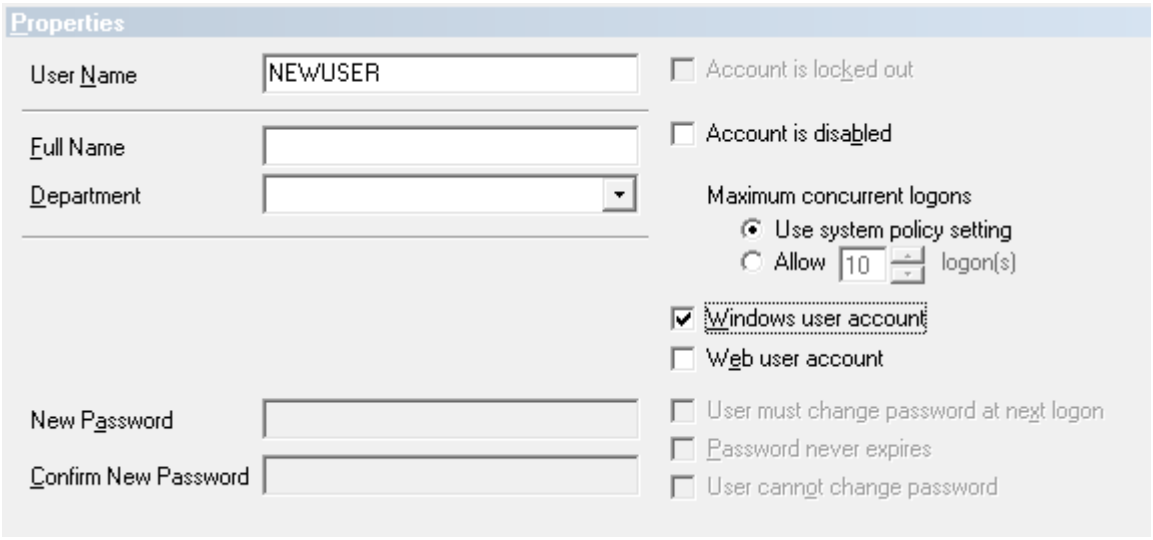
For InfoFlex users who are using a Windows user account, any password checking is always done against the Windows account on the Windows domain. For InfoFlex users who are not marked as a Windows user account, the behaviour of InfoFlex is unchanged.

7.2 Setting up a Windows Account

In order to use Windows authentication, a Windows user account must be set up within the InfoFlex database for each user who plans to use it.

Go into the **User Management** module and add a new user, via the **Users** menu, or **Add New User** toolbar button or **Ctrl+N**

Tick the check box **Windows user account**.



Type in the Windows account name as the username (the username is not case-sensitive). Fill in any other details as required.

Notice that the Password options are greyed out - there is no InfoFlex password for a Windows user account.

Save the user. Add permissions and group membership as usual. The InfoFlex user is now available for use.

Although the account can be disabled in InfoFlex, note that the InfoFlex account lockout policy does not apply to **Windows user accounts**. However the lockout policy that is set on the Active Directory or NT Domain will apply, so it is possible for the user to lock out their Windows Account if they exceed the number of password attempts allowed.

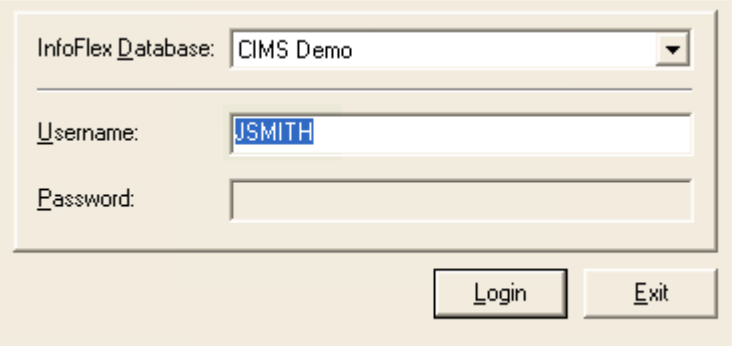
The policy concerning number of concurrent logons applies to Windows user accounts in the same way as for ordinary InfoFlex accounts.

7.2.1 Windows users with web access

If a user has both **Windows user account** and **Web user account** selected, they will not enter a password when logging into InfoFlex, because they log in with their Windows credentials. However, they require a password to be stored in the InfoFlex database for Web portal access. Therefore if the user is a **Windows User account** then when the **Web User Account** box is ticked, the password box is enabled, and the **User must change password at next logon** checkbox is also selected. The administrator must set a password for the user, which can be changed by the user at next portal logon. (Or the change password box can be unticked once the administrator sets the password if preferred). Setting a password will not change the way that the user logs on to the InfoFlex v5 client. They continue to use their Windows credentials. The password will apply to web access only.

7.3 Logging In

- If there are no Windows user accounts, logging into InfoFlex behaves as before.
- If there is a Windows user account whose username matches the Windows user who is currently logged onto the PC then Windows Authentication will be used to log into InfoFlex:
    - If there is only one database available, the user will be logged straight into that database, bypassing the login screen. So the current InfoFlex user will be the one whose username matches the Windows user logged onto the PC.
    - If there is more than one database available, when a database is selected that has a Windows user account whose username matches the Window user logged onto the PC, then the username is selected in the Login screen and no password is required. The user can just press Login to log directly into the database.



    - A different user can log in by typing their username into the Login form. The Password box becomes enabled and they must supply their password as usual.
- If a user who is not currently logged into the PC wants to login and has a Window user account in InfoFlex, they simply select the InfoFlex database and supply their username and **Windows** password.

If the Windows Account is locked out or disabled, the user will not be able to log into InfoFlex.

7.4 Change Database

When the change database form is shown, the current user's name is shown in the username box. A password is always required.

After selecting a database, if the account is a **Windows user account**, the user's Windows password is required. If the account is a normal InfoFlex account, the InfoFlex password is required.

A new user can enter their credentials by typing over the username and supplying the appropriate password.

7.5 Secure Entry Login

If **Secure Data Entry** is enabled for a data view, the current user name is always shown on the secure data entry login form. A password is always required.

If the account is a **Windows user account**, the user's Windows password is required. If the account is a normal InfoFlex account, the InfoFlex password is required.

A new user can enter their credentials by typing over the username and supplying the appropriate password.

After successfully entering a valid username/password with the correct permissions in the secure data entry dialog, the new user will be logged into InfoFlex. Any edits will be done in their name. Whenever a username/password is shown (e.g. for unlocking, secure data entry, changing database), their username will be shown by default.

7.6 Unlocking the Application

The current user's name will be shown in the unlock form. A password is always required to unlock InfoFlex.

If the user unlocking InfoFlex is a **Windows user account** the user's Windows password is required. For an ordinary InfoFlex account, the InfoFlex password is required.

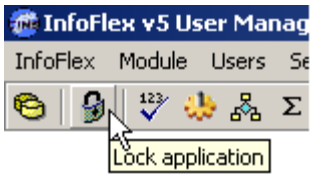
The rules concerning unlocking have not changed.

7.7 Notes

1. The InfoFlex **system** account cannot have the **Windows user account** property set.
2. The System Policy called "**Windows Authentication**" introduced in 5.30.1400 is no longer used.
3. Do not edit InfoFlex **Windows user accounts** using a client running an earlier version of InfoFlex than 5.30.1500.
4. If the actual Windows Account is disabled or locked out, the user will not be allowed to log onto InfoFlex. The message will just say "invalid username/password combination".
5. If there is a lockout policy on the Windows Domain, exceeding the number of password attempts whilst trying to login to or unlock InfoFlex will lock the user's Windows account.
6. In all login screens (main, change database, unlocking, secure data entry), the label next to the password box just says "**Password**". For a Windows user account the Windows password is required, for other InfoFlex users it is their InfoFlex password as normal.

8 Locking the Application

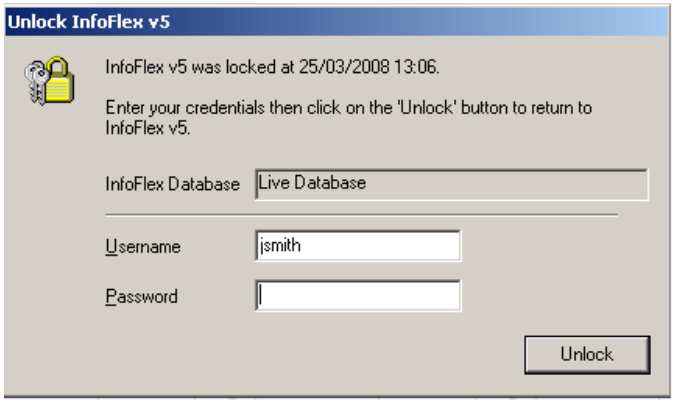
InfoFlex can be locked by using the **Lock Application** button or **Ctrl F12**. The **Lock Application** button can be found on the toolbar between the **Change Database** and module buttons.



8.1 Unlocking Data Entry or Work List

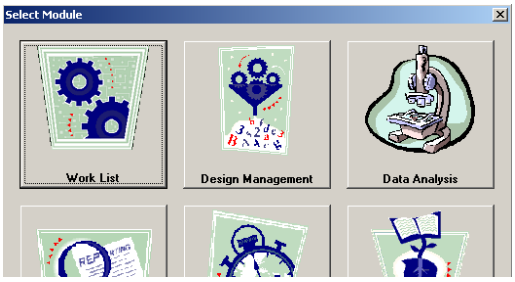
If the application is locked when the user is using Data Entry or the Work List module and there are no unsaved changes, then **any user** can unlock the application. In this case, the user who unlocks the application will be logged in and the audit trail will attribute any changes made to this new user.

The following message is displayed when the application is locked:

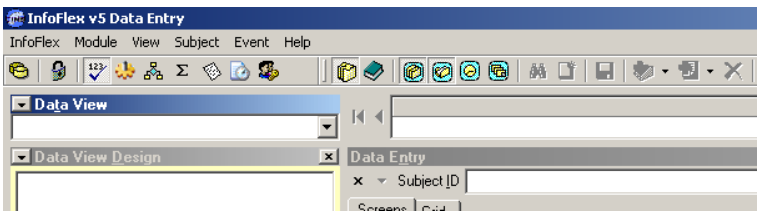


If a new user logs in and has the same permissions, the screen will be displayed exactly as the original user left it.

If the new user doesn't have access to the module that was locked, the new user will see the module select screen, or go straight into their module if they only have permission to one module.



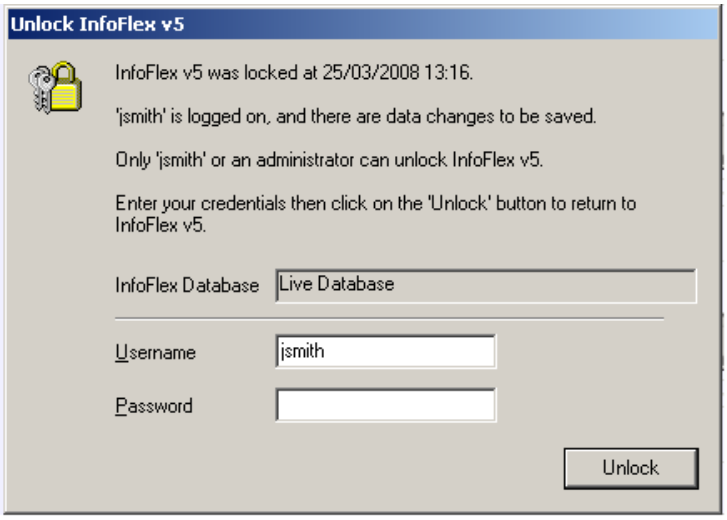
If the new user doesn't have access to the data view that was displayed, the Data View selection and all other boxes will be blank.



8.2 Unlocking Data Entry or Work List when there are unsaved changes

If the application is locked when the user is using Data Entry or the Work List module, and the user has made some changes which have not been saved, then the application can only be unlocked by the same user or a system manager. Note that in this case, the original user remains logged in (and their permissions applied) even if the application is unlocked by a different user. If the new user saves the changes, the audit trail will still attribute the changes to the original user.

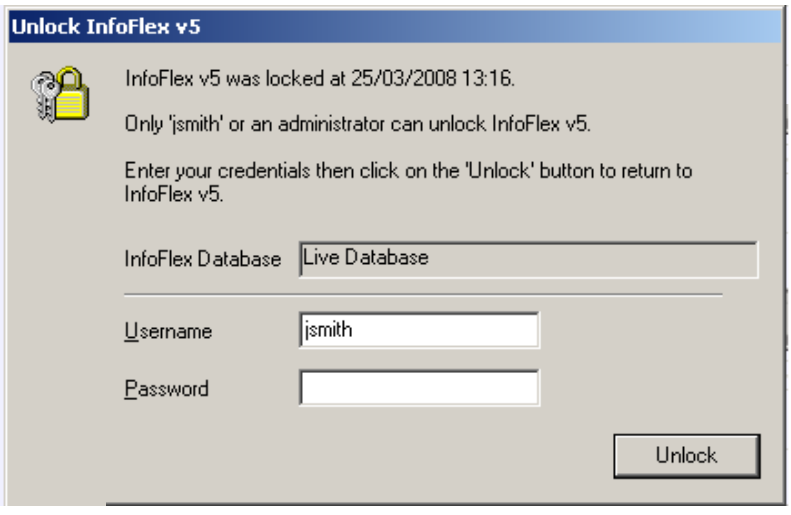
The following message is displayed when the application is locked:


Unlock InfoFlex v5
InfoFlex v5 was locked at 25/03/2008 13:16.
'jsmith' is logged on, and there are data changes to be saved.
Only 'jsmith' or an administrator can unlock InfoFlex v5.
Enter your credentials then click on the 'Unlock' button to return to InfoFlex v5.
InfoFlex Database
Live Database
Username
jsmith
Password
Unlock

8.3 Unlocking other modules

If the application is locked when the user is using any module apart from Data Entry or Work List, then the application can only be unlocked by the same user or a system manager. Note that even if the application is unlocked by a different user, it is still the original user who is actually logged in and whose permissions are applied. Therefore if the user who unlocks the application makes any changes that would be logged by the audit trail, these changes will be attributed to the original user, not the user who has unlocked the application.

The following message is displayed when the application is locked:


Unlock InfoFlex v5
InfoFlex v5 was locked at 25/03/2008 13:16.
Only 'jsmith' or an administrator can unlock InfoFlex v5.
Enter your credentials then click on the 'Unlock' button to return to InfoFlex v5.
InfoFlex Database
Live Database
Username
jsmith
Password
Unlock

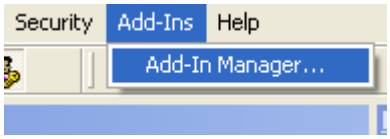
9 Add-Ins

Please note this section is only relevant if CIMS have provided you with extra functionality in the form of an Add-In.

9.1 Setting Up

After the Add-In control is registered (please call the CIMS Support Helpdesk for assistance with registering the control), it is ready to be configured.

From User Management, select **Add-Ins** > **Add-In Manager**. This will open the InfoFlex Add-In Manager.

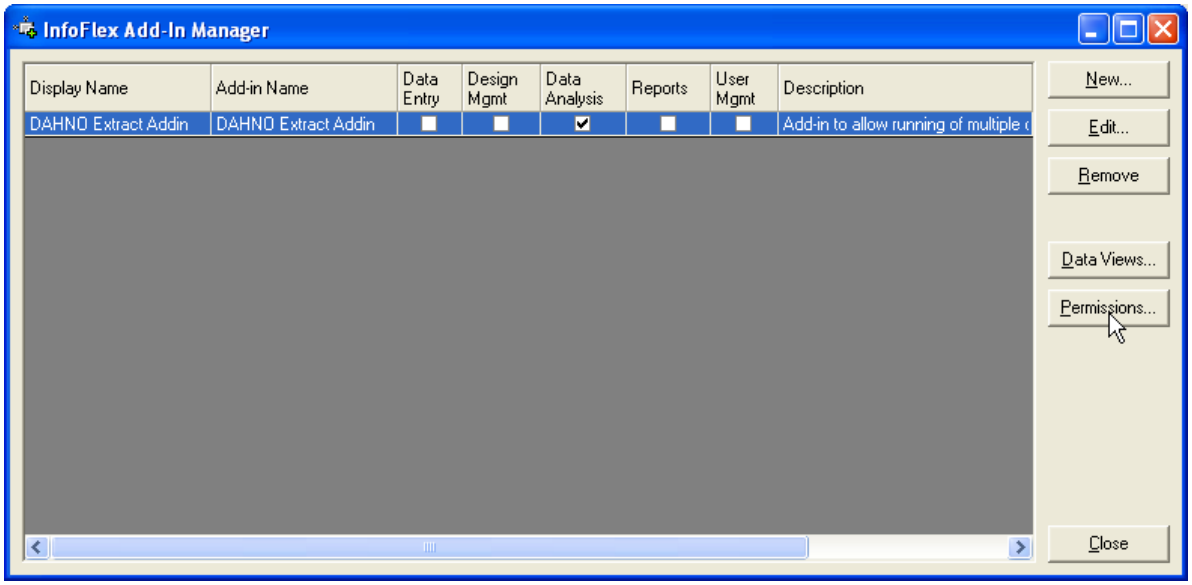


The settings for each Add-In will vary and should only be edited with help from an Implementer or the CIMS Support Helpdesk.

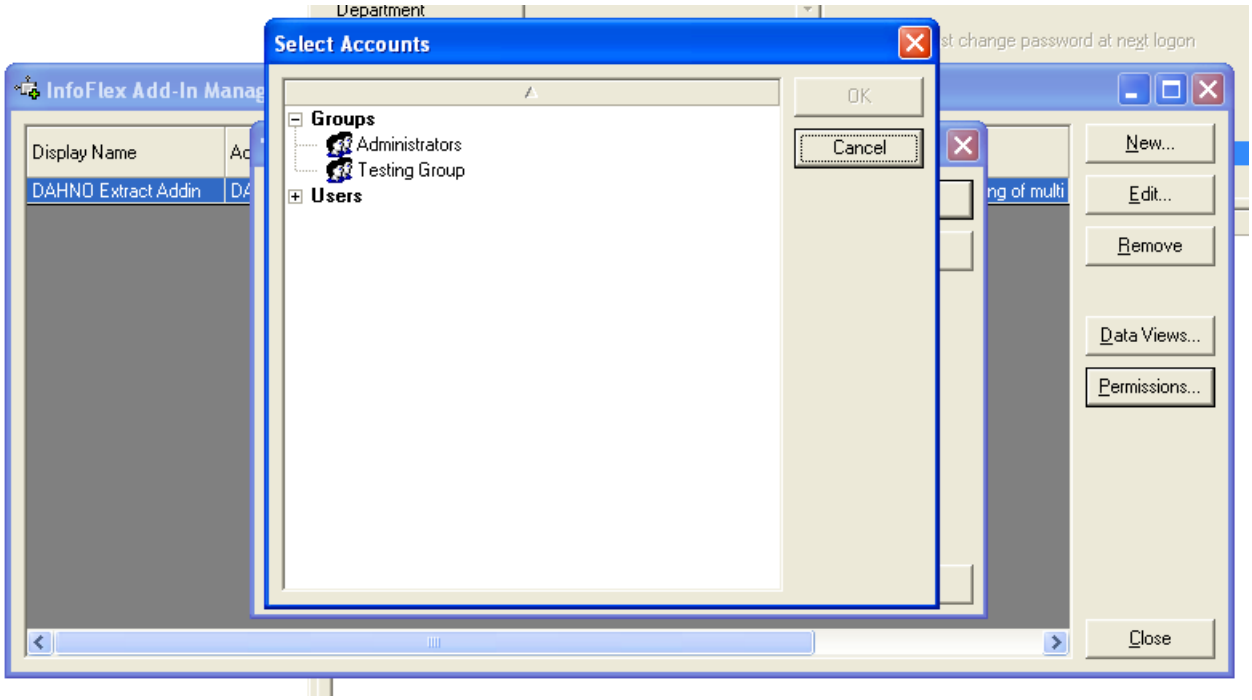
Once the Add-In is configured, you will need to select which Data View it is available from and which users can access it.

To select which Data View the Add-In can be accessed from, select the line in the Add-In Manager with the correct Add-In, and press the **Data Views** button. This will bring up a window asking you to choose which Data Views you want the Add-In to be available for.

To set which users will have access to the Add-In, press the **Permissions** button, this will open up a window where you can either select individual users or user groups.



To add a user / group, press the Add button. A new window will appear which will list all Users / Groups available to be assigned.



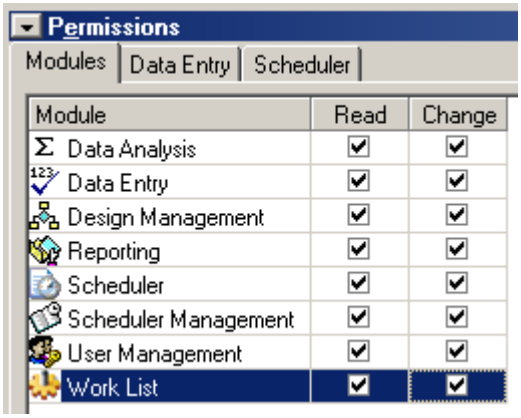
Select your User or Group and press OK. This will take you back to your initial window where you can see which Users you have assigned to this Add-In.

When you restart InfoFlex, the Add-In will be ready for use in the module which is relevant to that Add-In. It will be available only for the users that have been assigned permissions to it.

9.2 Work List module

To be able to use the Work List module, the module must first be licensed for the current database by registering the Add-In called **IfxWorklistModuleAddin.dll**.

Note that you do not need to set permissions on the Add-In because access is controlled by the Modules permissions for the user or the user's groups.



The **Modules** permissions will control a user's basic read/change access to the Work List module. Permissions to access only certain data views is set via the **Data Entry** permissions.

In User Management, it will still be possible to assign the Work List module to users even if the license add-in hasn't been registered. However, if a user attempts to open the Work List module on a database where the add-in hasn't been registered then they will receive an appropriate error message and the module will not open.

9.3 Pathway Viewer

To be able to view Pathways using the Pathway Viewer tool, the tool must first be licensed for the current database by registering the Add-In called **IfxPathwayViewerAddin.dll**. Because the Pathway viewer is a tool rather than a module, access to the Pathway Viewer is controlled through the Add-In permissions.

Note that in order to allow users to use the Pathway Viewer in the Work List module, you will require both the Pathway Viewer Add-In and the Work List module Add-In to be registered.

10 Audit Trail

This chapter will explain how to use the Audit Trail in InfoFlex. It presumes a familiarity with some basic computing operations and with InfoFlex. The Audit Trail is switched on through the User Management module in InfoFlex. The audit data is examined through a separate tool called the Audit Viewer.

10.1 Introduction to Audit Trail

The Audit Trail is used to record access to the system, data entry changes, design changes and calculation refreshes. Once enabled, details of the changes made in Data Entry, Design Management or User Management will be stored. The Audit Trail gives the system administrator access to successfully audit the system.

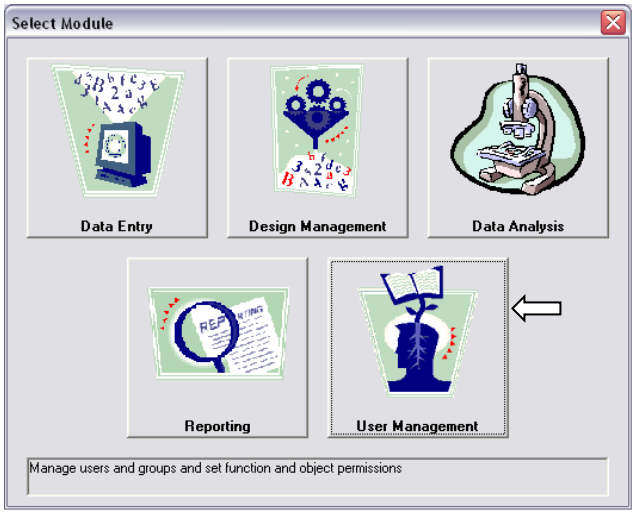
10.2 Overview of functions

- You can choose to audit either Data Domains, Dictionary Domains or both.
- You will be able to audit different modules within InfoFlex such as Data Entry, Design Management and User Management.
- You can choose to audit when users view data as well as when they change data.
- When a change is made in InfoFlex and is stored for auditing, the name of the computer the change was made from and the user who made the change are saved. This allows you to see all the changes made by a specific computer or user.
- You have the ability to display all changes made between dates you choose.
- When you want to archive the data, you can choose to archive it to a file, or another database.
- You can view the archived data in the Audit Viewer.

10.3 Setting up the Audit Trail

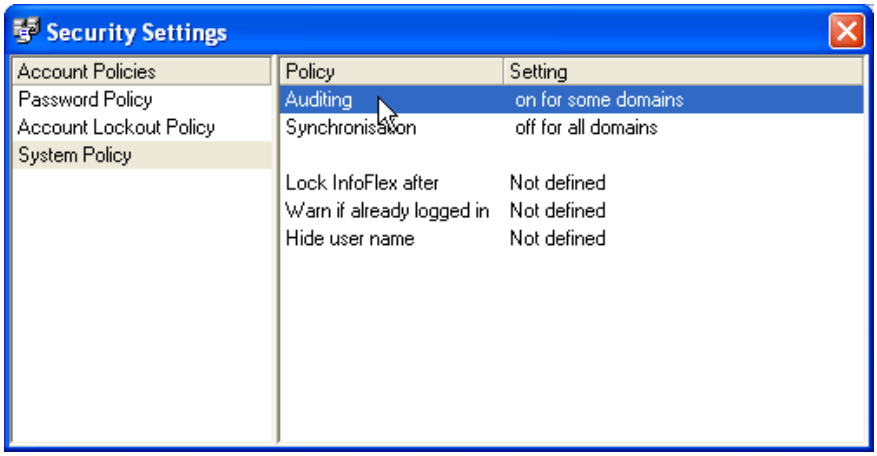
10.3.1 Turning on the Audit Trail

Setup of the Audit Trail is done from within User Management. The first step is to log in to InfoFlex and go to the User Management module.

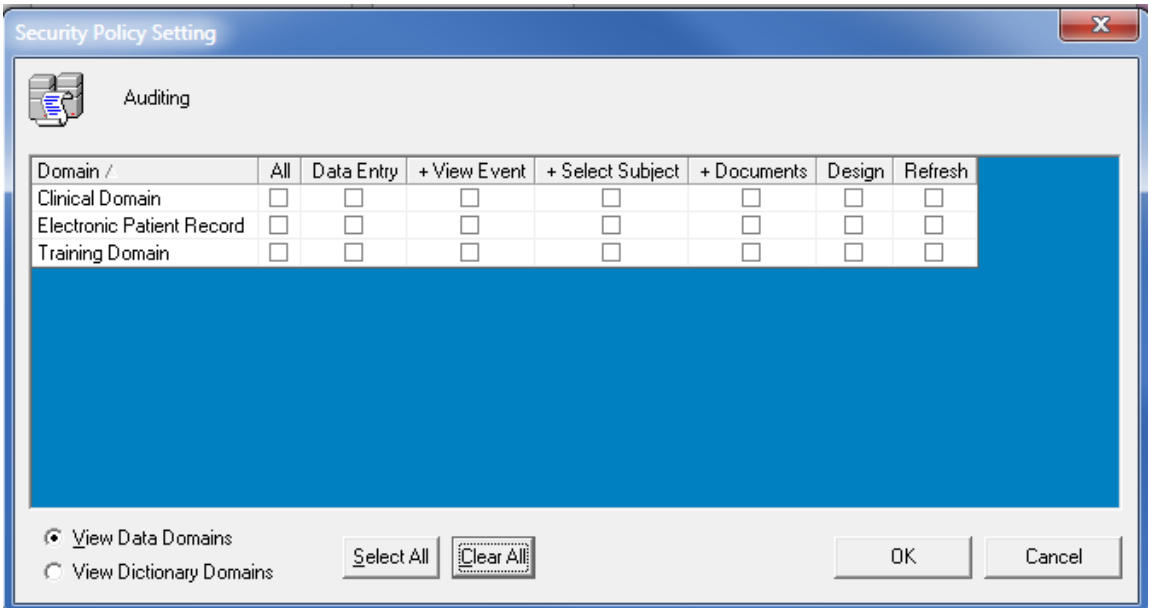


Once in User Management, select the **Security** menu and then **Policies**

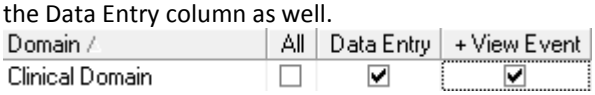
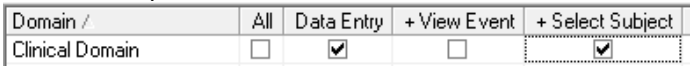
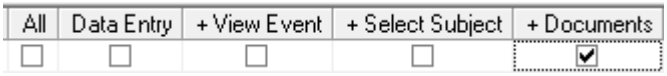
This will open the Security policies window. Under Account Policies select **System Policie**s. On the right of the window, under Policies, double click **Auditing**, this will display a new window which will allow you to select domains for audit.

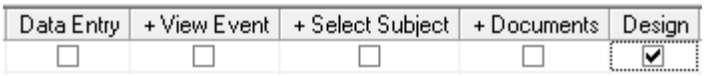
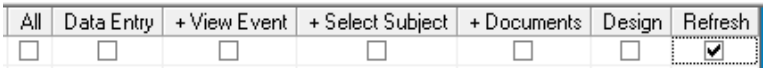


By default, the Data Domains will appear in the grid. Note that only unarchived domains are displayed.

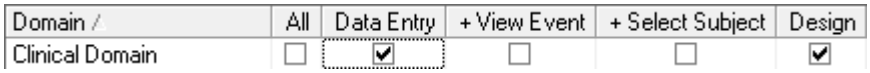


The following is a guide to the events that can be audited:

Audit Event	**Setting**
Account Usage – auditing InfoFlex users. Includes: Logging on, logging off, logon failure, account lockout.	These changes are always audited
User Management Changes Includes: adding new users, edit users, delete users.	These changes are always audited
Data Entry – changes to data that happen in either the Data entry module or the Work List module. Includes: adding new events, editing events, deleting events, adding and deleting subjects, purging subjects and data.	These changes are audited when there is a tick in the **Data Entry** column.
Viewing Events – auditing when a user selects and event to view in either the Data Entry module or the Work List module.	These changes are audited when there is a tick in the **+View Event** column. Placing a tick in this column will force a tick to be placed in the Data Entry column as well. 
Select Subjects – auditing when a user selects a subject in either the Data Entry module or the Work List module.	These changes are audited when there is a tick in the **+Select Subject** column. Placing a tick in this column will force a tick to be placed in the Data Entry column as well. 
Documents - auditing when a user creates and edits a document in the Data Entry, Work List or Scheduler module (including auto-generated documents) and Report changes made in the Reporting module.	These changes are audited when there is a tick in the **+ Documents** column. 
Design Management Changes – auditing	These changes are audited when there is a tick in the **Design** column.

when definitions are changed in Design Management (e.g. events, items etc.) Includes: adding new definitions, editing definitions, deleting definitions, purging definitions.	
Refresh – auditing of Design Management refreshes and the IfxBatchProcess **Recalculate Items** and **Update NOW and AGE** processes.	These changes are audited when there is a tick in the **Refresh** column. 

Typically, you will want to audit data changes and design changes.



If you audit viewing of events and the selection of subjects, please note that this will create a very large number of audit records.

To view dictionaries available for auditing, check the **View Dictionary Domains** option. Repeat the steps above to turn on auditing for dictionaries.

Once you have turned on auditing for all your desired domain(s) press OK to both windows. To enable the system to start auditing, InfoFlex will need to be closed and then re-opened.

Please note that there will not be data to audit until there have been some users who have made changes in the domain being audited.

10.3.2 Turning Off the Audit Trail

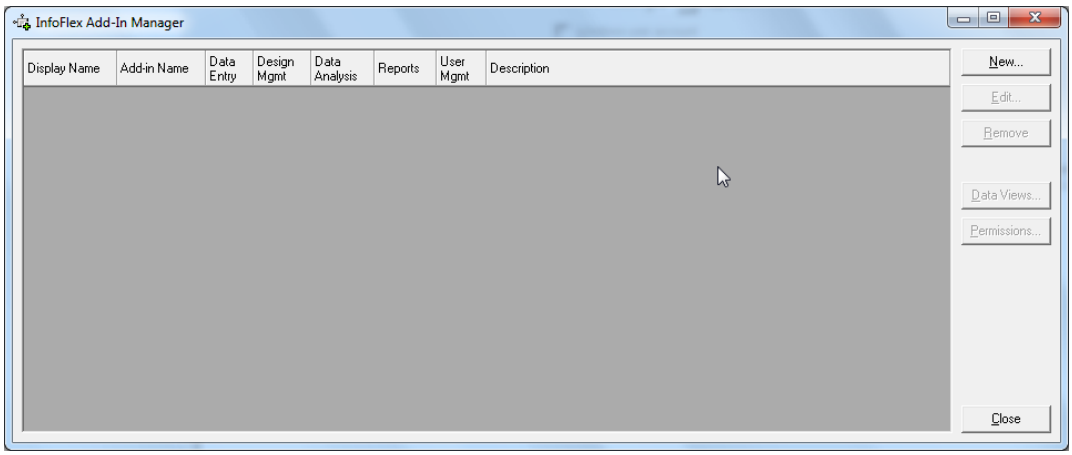
To turn off auditing for all, or a specific domain go through the same process as turning on auditing. Follow the steps above, but instead **clear** the ticks in all of the columns – **Data Entry**, **+View Event**, **+Select Subject**, **Design.** This will turn off Auditing for your selected domain. You will have to close and open InfoFlex for the changes to take effect.

10.4 Allowing Access to the Audit Viewer via the Audit Viewer Add-in

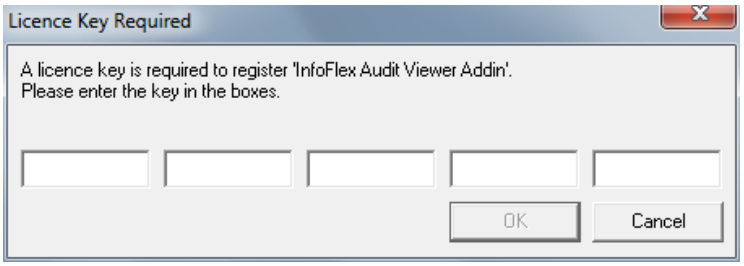
In order to allow users to access the audit viewer tool, you need to grant them permissions to do so using the Audit Viewer add-in. The Audit Viewer add-in's purpose is simply to restrict the use of the Audit Viewer to a set of authorised users.

To be able to use the Audit Viewer tool, the tool must be licensed for the current database by registering the Add-In called **IfxAuditViewerAddin.dll**. Access to the Audit Viewer is then controlled through the Add-In permissions.

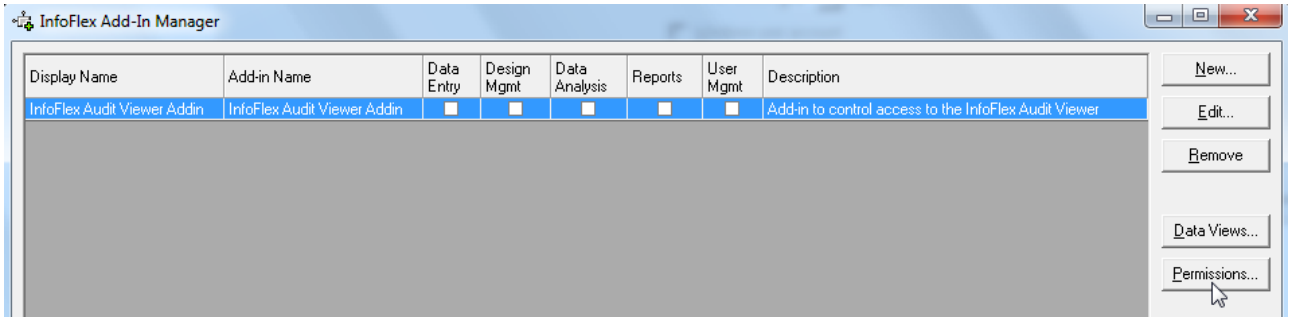
In the User Management module, select the menu item **Add-In Manager**… from the **Add-Ins** menu. The **InfoFlex Add-In Manager** appears.



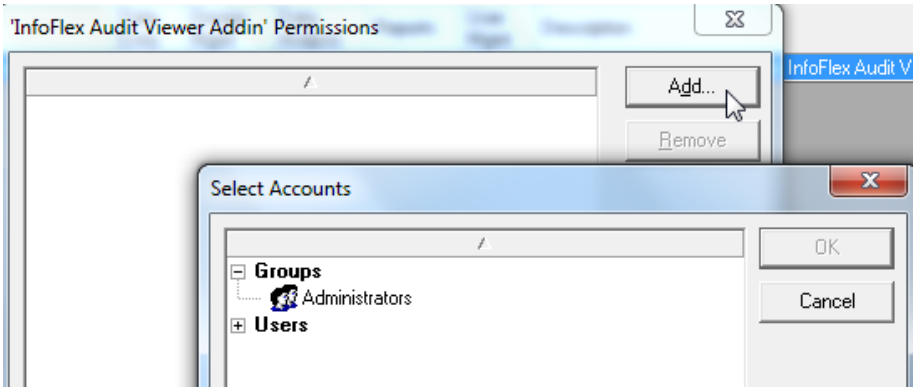
Select the **New**... button and choose **IfxAuditViewerAddin.dll** from the files in the Progs folder. There will be a prompt for the Licence key. This can be obtained from CIMS Support.


Licence Key Required
A licence key is required to register 'InfoFlex Audit Viewer Addin'.
Please enter the key in the boxes.
OK
Cancel

Enter the licence key and press the OK button. The Add-In Manager will add a line to the table for this add-in. Select this line and click on the **Permissions...** button.



Add the users or user groups that you want to allow to use the Audit Viewer tool.



Select OK and close the windows. There is no more configuration required for the Audit Viewer Add-in.

You are now ready to use the Audit Viewer tool.

10.5 Examining Data with the Audit Viewer

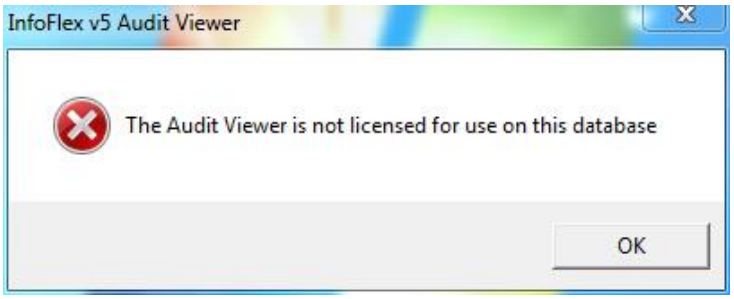
This section presumes that you have some audit data already captured by InfoFlex.

10.5.1 Opening and Navigating

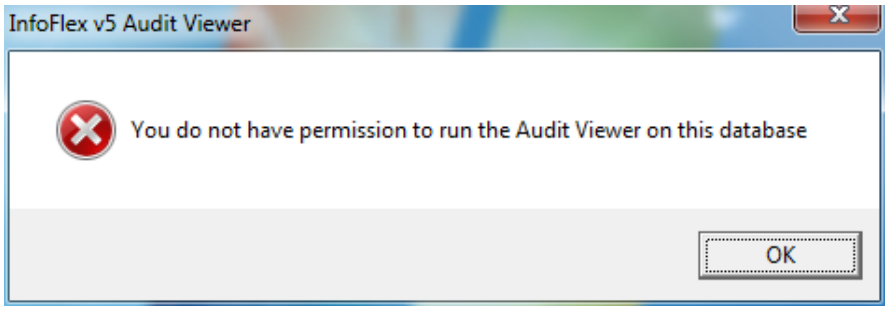
To open the Audit Trail, double click on IfxAuditViewer.exe

You will be presented with the InfoFlex logon screen. Login as normal, but make sure you're logging into the same database you turned auditing on for!

If you have not successfully registered the Audit Viewer add-in on the database you will receive the following message:

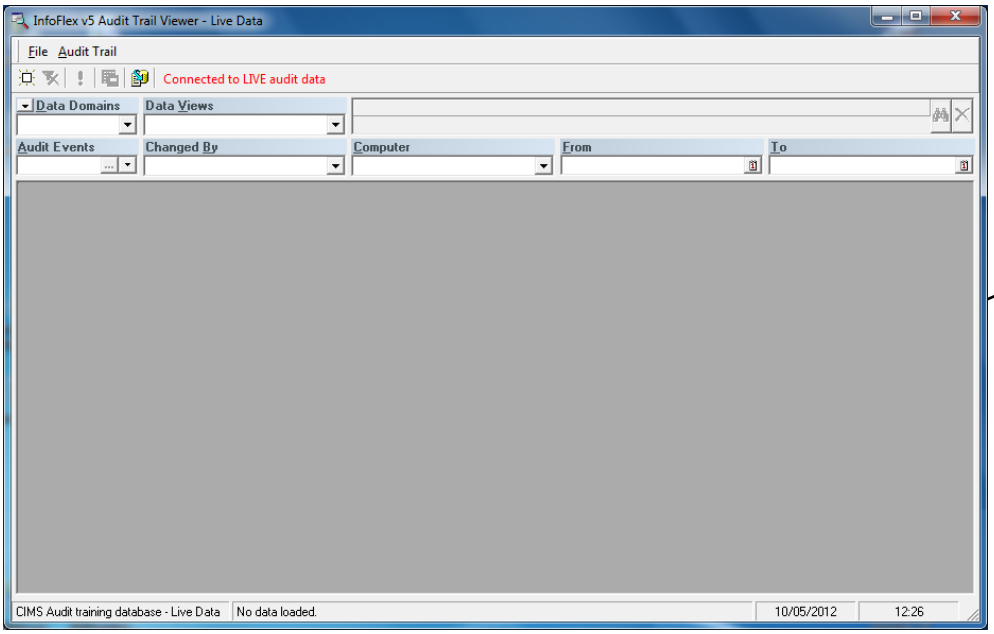


If you have registered the Audit Viewer add-in but have not granted access to the user logging on you will receive the following message:



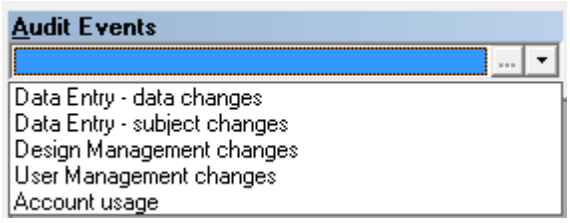
If you have successfully registered the add-in and granted the user access to the Audit Viewer then the Audit Viewer tool will appear.

Once the Audit Trail is open, it is from here you can view all audited events.



10.5.2 Selecting and Loading Data - Overview

First select the type of Audit Event you want to look at:

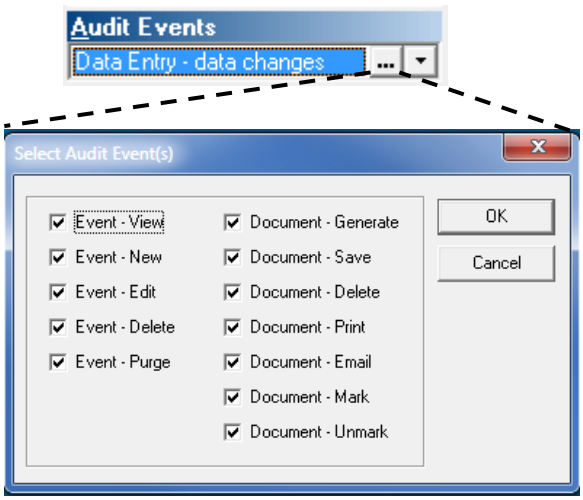


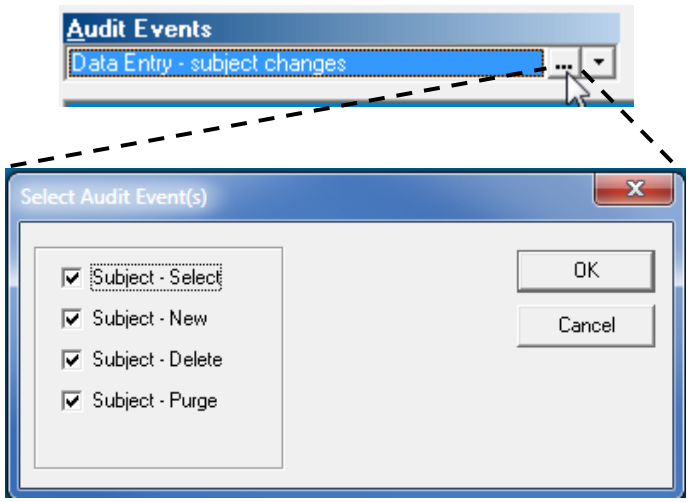
Note that **Data Entry - data changes** includes changes made to both events and documents.

Note also that calculation refreshes cannot currently be viewed in the audit viewer. See section 10.10 below.

Having selected the Audit Event, you can further refine the data you want to look at. You can do this in the following ways:

- Restrict the audit events further (press the ellipsis and select or deselect the options. For example just view 'Subject Delete' or 'Event New');

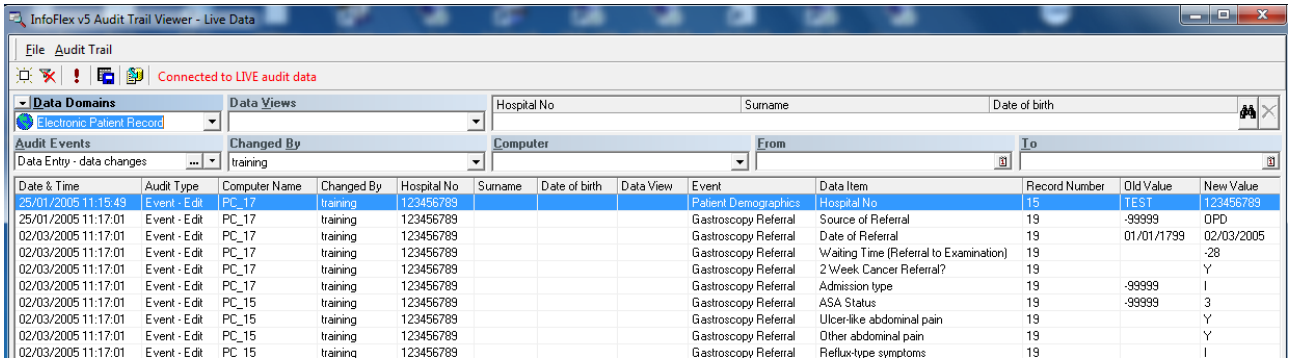




- Select a Data Domain;
- Select a Data view;
- Select a specific Subject using the subject search;
- Select a Computer that the change was made from;
- Select a Date range that the change was made within;
- Select a User who made the change.

These selections filter the data being retrieved from the database. Not all filters are relevant to all audit events. For example, Domain, Data view and Subject are not relevant to User Management changes and Account usage.

After selecting the type of Audit Event and any filters you want to apply, press the button to load the Audit Trail data. You can also use F5 or the menu item **Audit Data --> Load Data**.

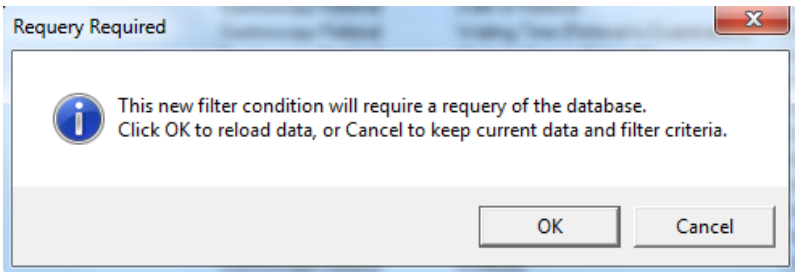

InfoFlex v5 Audit Trail Viewer - Live Data
File Audit Trail
Connected to LIVE audit data
Data Domains
Electronic Patient Record
Data Views
Hospital No
Surname
Date of birth
Audit Events
Data Entry - data changes
Changed By
training
Computer
From
To
Date & Time | Audit Type | Computer Name | Changed By | Hospital No | Surname | Date of birth | Data View | Event | Data Item | Record Number | Old Value | New Value
25/01/2005 11:15:49 | Event - Edit | PC_17 | training | 123456789 | | | | Patient Demographics | Hospital No | 15 | TEST | 123456789
25/01/2005 11:17:01 | Event - Edit | PC_17 | training | 123456789 | | | | Gastroscopy Referral | Source of Referral | 19 | -99999 | OPD
02/03/2005 11:17:01 | Event - Edit | PC_17 | training | 123456789 | | | | Gastroscopy Referral | Date of Referral | 19 | 01/01/1799 | 02/03/2005
02/03/2005 11:17:01 | Event - Edit | PC_17 | training | 123456789 | | | | Gastroscopy Referral | Waiting Time (Referral to Examination) | 19 | | -28
02/03/2005 11:17:01 | Event - Edit | PC_17 | training | 123456789 | | | | Gastroscopy Referral | 2 Week Cancer Referral? | 19 | | Y
02/03/2005 11:17:01 | Event - Edit | PC_17 | training | 123456789 | | | | Gastroscopy Referral | Admission type | 19 | -99999 | I
02/03/2005 11:17:01 | Event - Edit | PC_15 | training | 123456789 | | | | Gastroscopy Referral | ASA Status | 19 | -99999 | 3
02/03/2005 11:17:01 | Event - Edit | PC_15 | training | 123456789 | | | | Gastroscopy Referral | Ulcer-like abdominal pain | 19 | | Y
02/03/2005 11:17:01 | Event - Edit | PC_15 | training | 123456789 | | | | Gastroscopy Referral | Other abdominal pain | 19 | | Y
02/03/2005 11:17:01 | Event - Edit | PC_15 | training | 123456789 | | | | Gastroscopy Referral | Reflux-type symptoms | 19 | | I

The total numbers of records which are brought back will be displayed at the bottom of the screen.

Please note that the grid will only be populated if InfoFlex has captured some data for auditing.

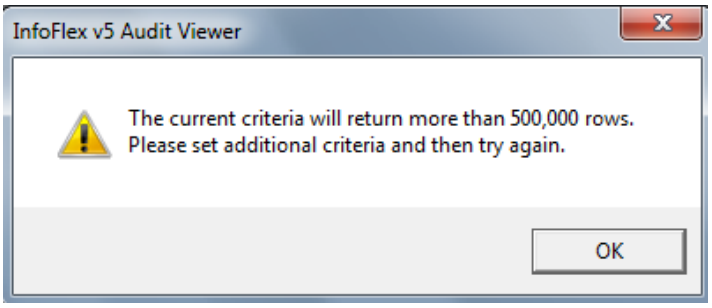
Having retrieved some data, you can apply more filters to refine the data further, or you can change the data you are looking at.

If you widen the selection of data, or change which audit events you are looking at then the Audit Viewer will need to re-query the database, because you are selecting records that were not in the original set you looked at. The Audit Viewer will tell you that this is required and allow you to cancel the operation.

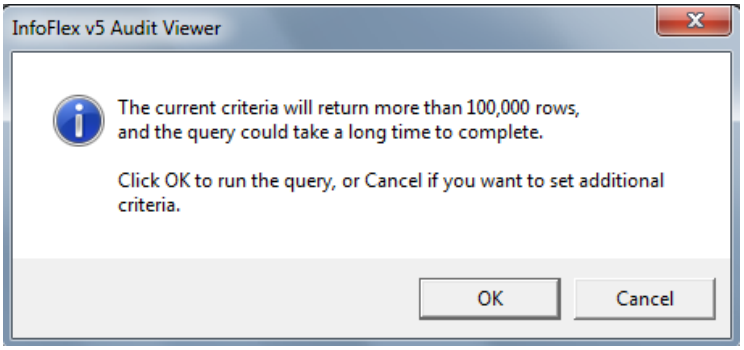

Requery Required
This new filter condition will require a requery of the database.
Click OK to reload data, or Cancel to keep current data and filter criteria.
OK
Cancel

If you narrow the scope of your search and further filter the set of records you originally retrieved, then the Audit viewer will not need to reload audit data from the database, and will show you the results immediately.

The Audit Viewer will not show more than 500,000 rows of data to avoid it becoming unresponsive because of too much data in the grid. If your original selection would return more than 500,000 rows the audit viewer will let you know, and ask you to apply more filters criteria.


InfoFlex v5 Audit Viewer
The current criteria will return more than 500,000 rows.
Please set additional criteria and then try again.
OK

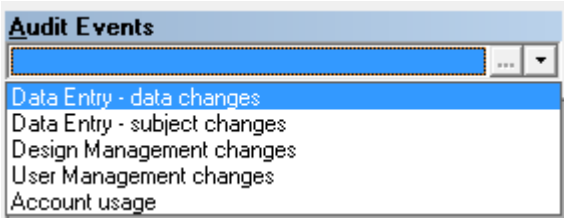
If your selection would return between 100,000 and 500,000 rows of data, then the Audit Viewer will warn you of this and allow you to cancel the operation if you want.


InfoFlex v5 Audit Viewer
The current criteria will return more than 100,000 rows,
and the query could take a long time to complete.
Click OK to run the query, or Cancel if you want to set additional criteria.
OK
Cancel

You can view your retrieved records in the Audit Viewer, or export the results to a csv file.

10.5.3 Selecting and Loading Data – Audit Events

To display data about the selected domain, press the arrow next to the **Audit Events** option. This will give you a list of audited events you can view.

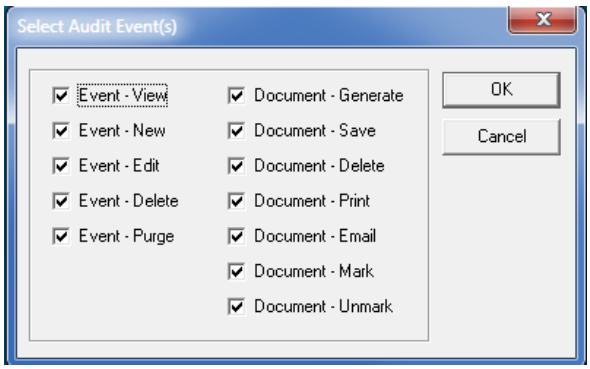


Selecting one of these audit events will display data as follows:

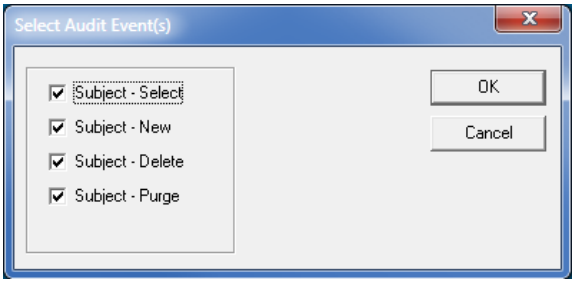
- **Data Entry – data changes**: this displays changes made to events and documents whilst in Data Entry.
- **Data entry – subject changes:** this displays which subjects have been changed. Subject changes will only display subjects that have been added or deleted from InfoFlex Data Entry or Work List modules.
- **Design Management changes**: this shows all design changes made to the domain.
- **User Management changes:** this displays all changes made to an InfoFlex user.
- **Account Usage:** this displays which users have logged in or out of InfoFlex or other InfoFlex tools. It also shows failures to log in and account lockouts.

Each Audit Event can be refined by pressing the ... button next to the down arrow. A further dialog allows you to select which type of changes you wish to view.

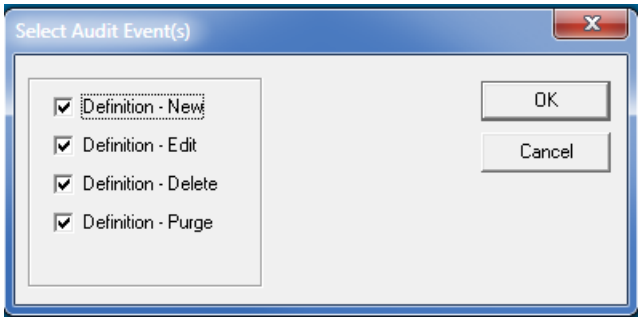
For **Data Entry – data changes**:



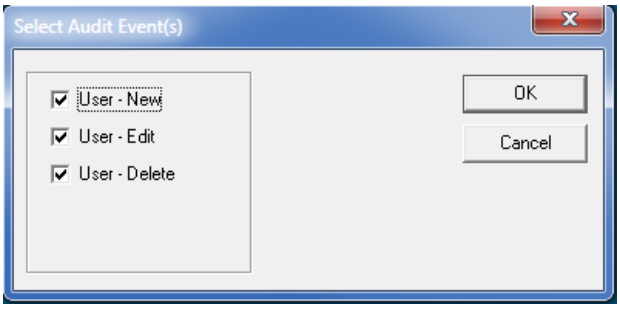
For **Data Entry – subject changes**:



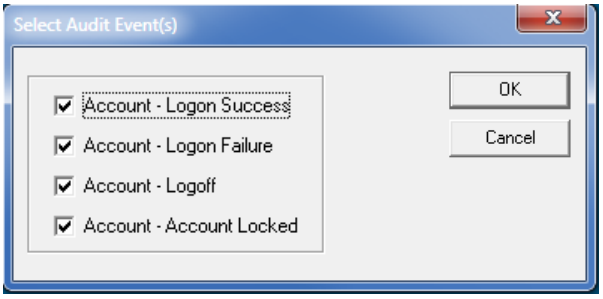
For **Design Management changes**:



For **User Management changes**:

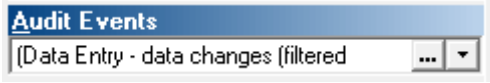


For **Account usage**:



You can remove the tick from some of the Audit Events to exclude those type of events from your results.

The Audit Event pane will show that some of the Audit Events have been excluded by adding '(filtered)' after the Audit event type. For example **'Data Entry – data changes (filtered)'**.

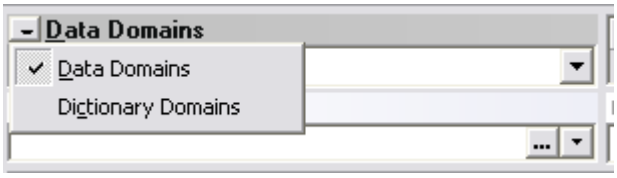


10.5.4 Selecting and Loading Data - Domain and Data view

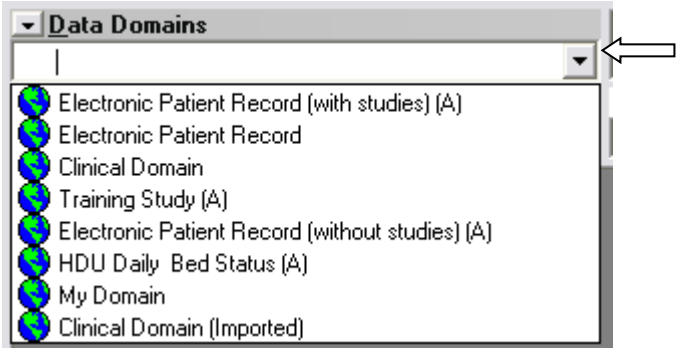
Selecting a domain is not necessary if viewing user management changes or account usage, however it is relevant to all other types of audit event.

If possible, it is advisable to select the domain that you wish to see audit records from, because the column headings in the grid will become more meaningful once a domain is selected. The reason for this is that if the domain is known, then the primary and secondary identifiers of the subjects can be shown as columns and it will be easier then to identify subjects.

First select whether you want to view events from Data Domains or Dictionary Domains. Do this by pressing the down arrow next to the word **Data Domains.**

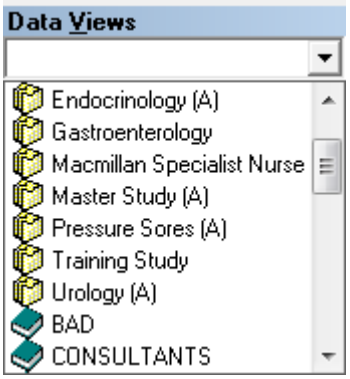


Once you have selected which type of domain you wish to view, pressing the **down arrow** in the domain field will display a list of available domains.



Select a domain from the list by single clicking it. This will display the name of the domain in the domain field.

If you want to further narrow your audit data to a particular data view, you can select the data view from the Data views drop down. Dictionaries are listed after the data views.



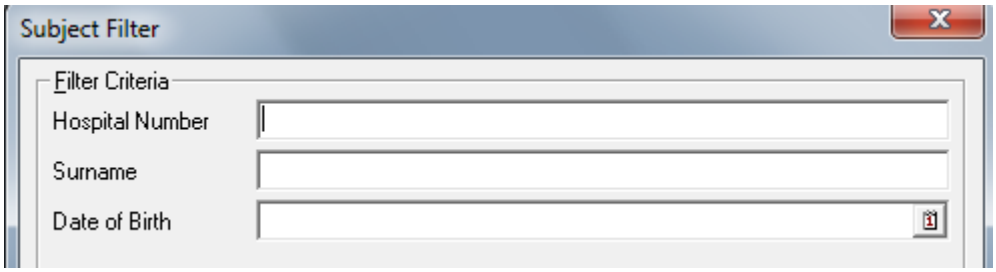
Note though that some older audit data did not store the data view as part of the audit record and so some older records may have no data view recorded.

10.5.5 Selecting and Loading Data – Filtering by Subject

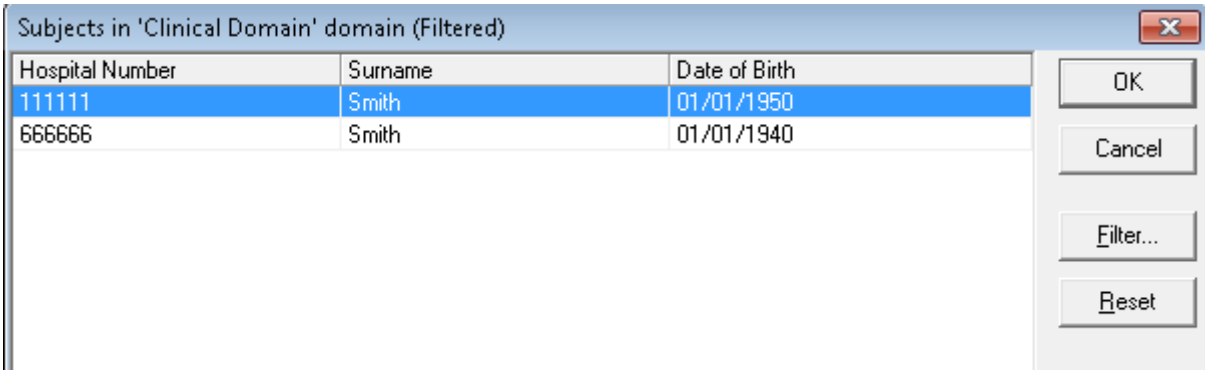
If you want to retrieve data about a particular subject, press the **Binoculars** icon on the tool bar.

This button is only available when you have selected a domain.

A search window will allow you to search for a subject based on the primary and secondary keys for that domain. You can use asterisks * and percent sign **%** as wildcards.

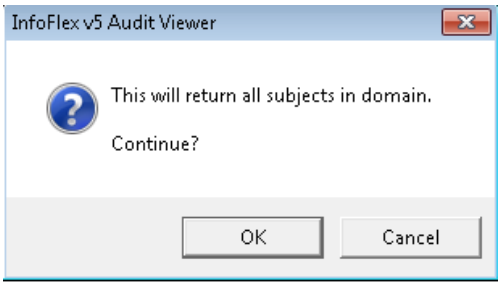


Type in the criteria that will help you find the subject you are looking for. Press the **OK** button. The subjects that match the criteria will be shown in a list. Select the one that you want to look at press the OK button.

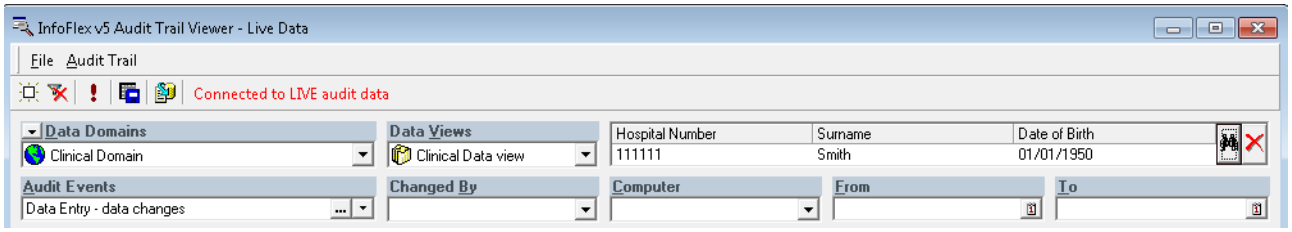


To add or change the filter press the **Filter...** button.

Pressing the **Reset** button will clear the filter criteria so that you are searching for all subjects in a domain. On many domains this will be too many to view in a pop-up and take a long time, so the Audit Viewer will prompt you before it does that.



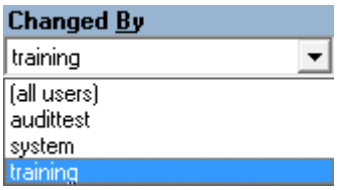
Once you have selected the subject, the identifiers for that subject will be shown in the top right hand box. You can choose the audit events and other filter criteria as normal to retrieve only the audit events that have been logged for the selected subject.



10.5.6 Filtering by InfoFlex user

When an event is changed in InfoFlex, amongst the data saved for auditing is the user who made that change.

To filter your data by a specific user, press the down arrow next to the **Changed By** option. This will give you a list of user you can select.

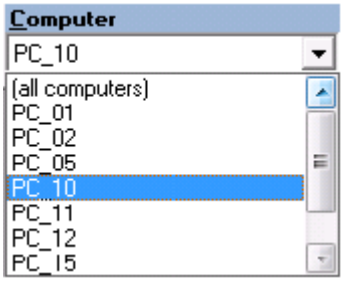


Selecting the user will display all changes they have made within your selected domain. If no user is selected then data will be retrieved for all users.

10.5.7 Filtering by Computer Name

As each computer is assigned a unique name, InfoFlex saves the name of the computer which on which the changes took place.

To filter by computer name, press the down arrow next to the **Computer Name** option. This will present you with a list of available computers to select from.

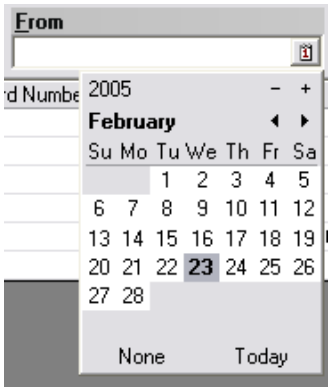


When a computer is selected, the audit data is filtered to only show the audit events that happened from the chosen computer.

10.5.8 Filtering within a date range

There is likely to be a lot of data displayed for a specific domain, you have the option to bring back data from within a specific date range.

On the toolbar, there are two options that allow you to do this. The first is the **From** range, pressing the calendar icon will display a calendar which will allow you to select the date range you wish to start from. Note that you cannot type into the boxes; you must select a date from the calendar.



The second option is the **To** range. This allows you to select an end date for the range.

If you have a **From** date and a **To** date, then only audit events within those dates are shown in the grid. It goes from 00:00 on the **From** date, to 23:59 on the **To** date. On selecting the dates, the filter is immediately applied to any audit data already in the grid.

If you don't choose a **From** date, the audit data will be shown from the earliest date recorded to the **To** date. If you do not choose a **To** date, the audit data will be shown from the **From** date to the latest date recorded (i.e. up to the current time).

10.6 The Toolbar

There are five buttons on the Audit Viewer toolbar:

Reset button (Shift+del). This button clears all filters and data. So it allows you to get back to a clear audit viewer with no filters selected and no data in the grid.

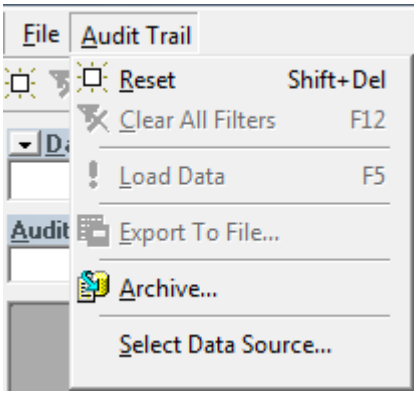
Clear all Filters button (F12). This removes all currently set filters which are applied to the data but leaves the audit event selected. Note that this widens the scope of the query so that all records are retrieved of the selected audit event, which may be a large amount of data.

Load Audit trail data. To load the audit trail data from the database press the button.

Export results to file. Exports the results currently showing in the audit viewer grid to a file. The file will be a comma-separated text file and a browser will allow you to save it where you wish. You can then use other tools to analyse the audit data further or present the data in different ways.

Archive audit data. To archive the data, use the button. This will open archive audit data window.

All of these options are also available in the Audit Trail menu item.

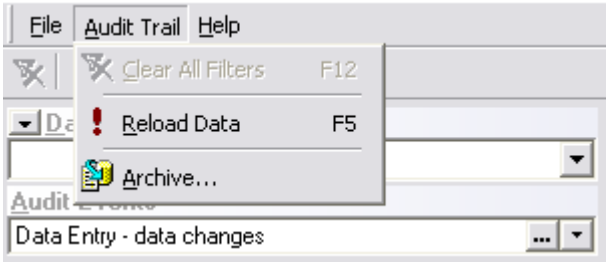


10.7 Archiving Data

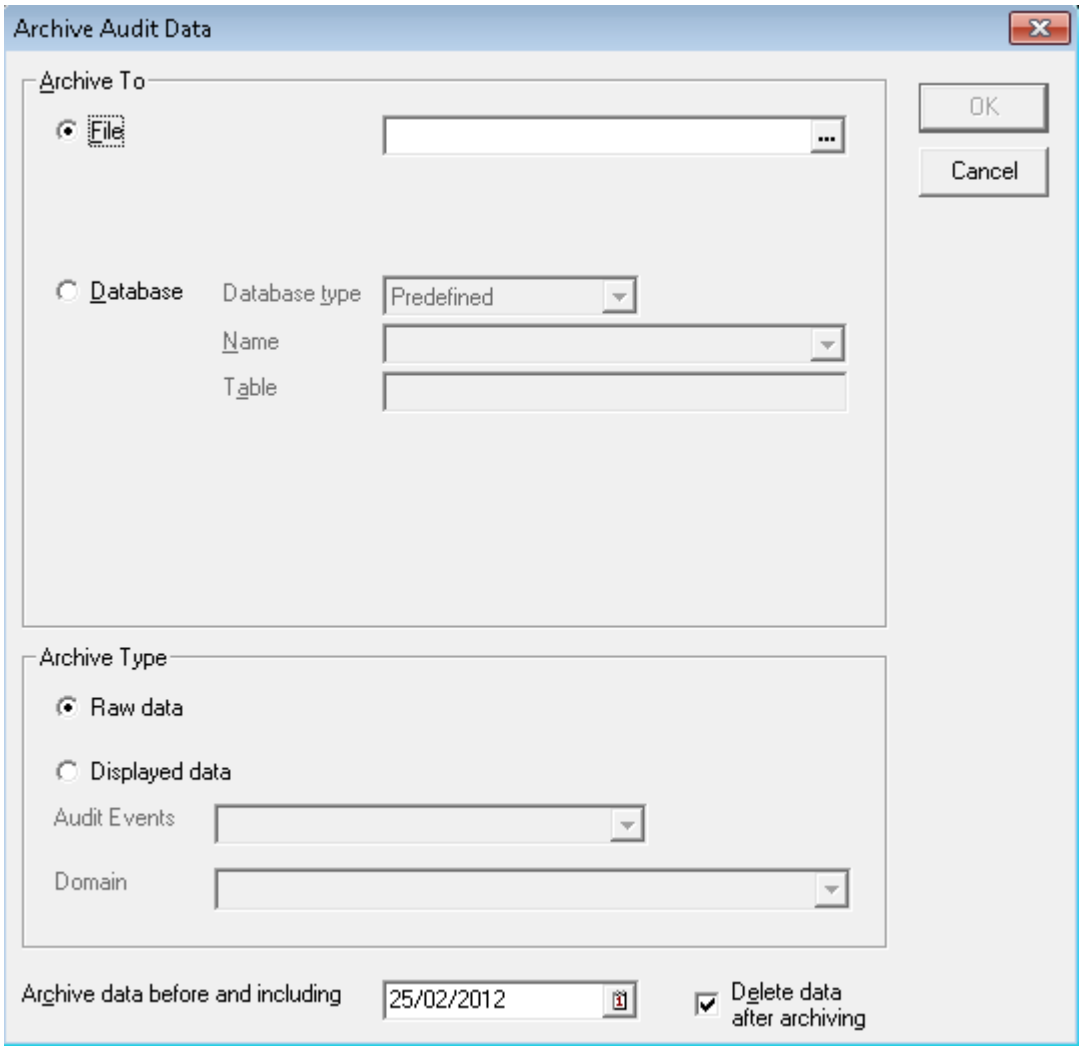
The Archive Audit Data window is where you have the facility to archive your data to either a file or another database. This can be accessed through either one of two methods:

You can either use the icon on the tool bar

Or you can use the Audit Trail menu icon.



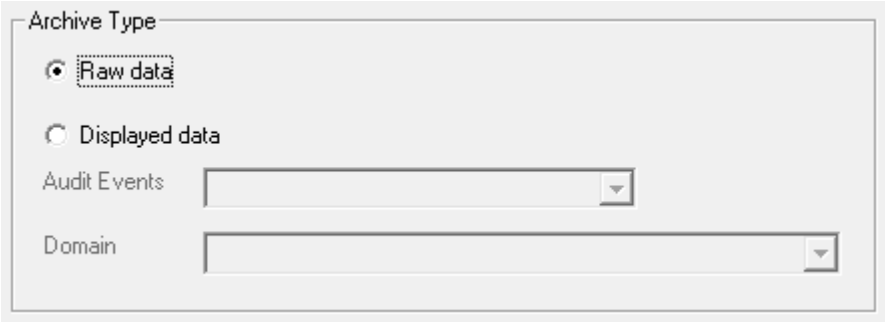
Once you select either of the two options, the Archive Audit Data window will open.



10.7.1 Archiving to a File

Archiving your data to a file produces a Comma-separated value (*.csv) file.

The first choice is whether you want to archive **Raw data** or **Displayed data**



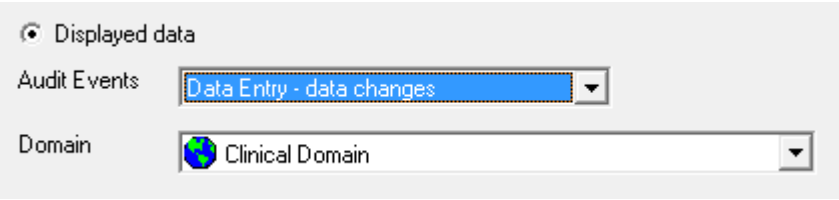
When you archive Raw data, you are saving the data exactly as it is stored in InfoFlex, not necessarily how it is viewed in the Audit Viewer. When you archive Displayed data, you are archiving the data how you see it in the Audit Viewer.

For example, InfoFlex stores item keys for the names of domains, data views, data items etc in the audit data, but when they are shown in the Audit Viewer, the audit viewer looks up the name of these items to show rather than the item keys. For subjects in the database, a number is stored, and the Audit viewer will look up the identifiers of that subject to show in the Audit Viewer.

The choice of which to pick depends on what you are going to do with the archive. If you want to use the archive in the Audit Viewer, to view the archived data, you will need to pick **Raw Data**.

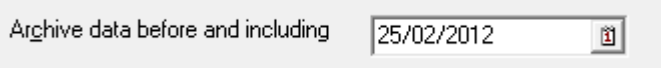
If you are going to use the data in other tools to analyse or report on the data, then you will want to pick **Displayed data**, otherwise the data will not seem meaningful outside of InfoFlex.

If you choose Displayed data, then you need to pick which audit events you want to extract and for which domain. This determines what the column headings will be in the extracted data.



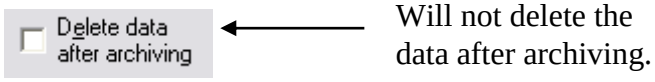
Having chosen Raw or Displayed data, now choose the date you wish to archive your data up to.

To do this, press the calendar icon at the bottom left of the Archive Audit Data window. By default the date of three months before the current date will be selected, but you can change it if desired.

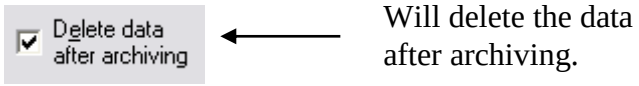


If you choose to archive **Raw** data, you have the option to either keep the data in the Audit Viewer or delete it after you have finished archiving. This means you will only have the data after your

selected date in the database. To keep the data and NOT delete it, uncheck the **Delete Data After Archiving** option.



To delete the data, check the **Delete Data After Archiving** option. The data before your selected date WILL NOT appear in the Audit Viewer,



Once you have selected your date and whether you wish to delete the data, press the button in the archive to File field at the top of the window.

This will open the Select archive file window. From here you can save your archive file to either a network location, or your local PC.

Press the **OK** button to perform the archiving. A message will tell you how many records have been archived.

10.7.2 Archive to Database

This option allows you to archive your data to one of three different options of database. The options are:

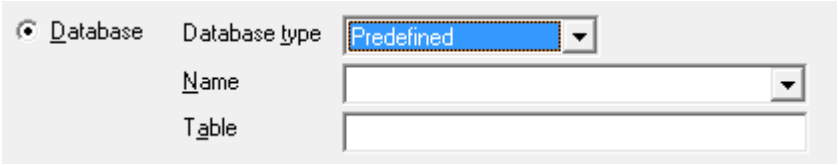
1. Predefined: This will list all valid InfoFlex database you have setup in your profile.
2. Access: Here you can select a separate access database which you want to archive to.
3. SQL Server: You can archive the data to a SQL Server database.

First select the check box next to Database. This will allow you to archive your data to a database.

Next select the **Database type** from the dropdown list.

Each of the different database types has different field which need to be completed.

Predefined:



Pressing the down arrow in the **Name** field, gives you a list of all available databases you have setup in your InfoFlex profile.

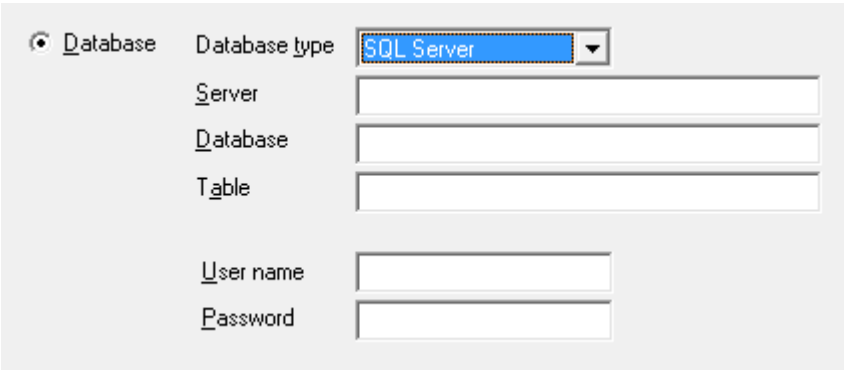
Once you have selected your database, enter which table to archive to in the **Table** field. You will need to follow the Access or SQL conventions on Table names. If the table does not already exist it will be created. If the table already exists the audit viewer will add new rows to it, as long as the audit record is not already present in the table.

Access:

To select the access database you wish to archive data to, press the in the **File Name** field. This will open up a window allowing you to browse for the database you wish to archive to.

Once you have selected the database, enter the table you wish to archive to in the **Table** field. Similarly the table will be created if it does not already exist.

SQL Server



For a SQL Server database enter a valid Server name and name of the SQL database. Enter a table name (which will be created if it does not already exist). In the User name and Password fields, enter the SQL username and password of a user which has appropriate permissions to perform this operation.

After selecting the database, you need to select the **Archive Data Before** date and whether you want to delete the data once it is archived. For more information on this subject, see *10.7.1 Archiving to a File.*

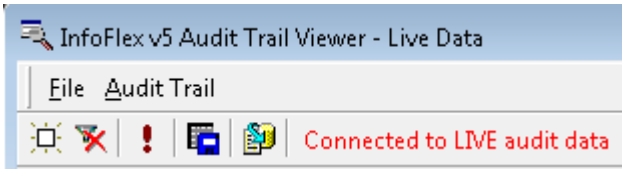
10.8 Viewing Archived data in the Audit Viewer

10.8.1 Overview

When the Audit Viewer opens, it will be looking at the live Audit data in your current database. However, you can now also use the Audit Viewer to view archived audit data including data that was archived before this new functionality was added. The archived audit data must be from the same database.

Note that if you want to view archived data from a file, you need to have selected '**Raw Data'** not **'Displayed data'** when you were archiving the data.

Notice that the Audit Viewer tells you what data it is connected to in red next to the tool bar. By default it says 'Connected to LIVE audit data'.



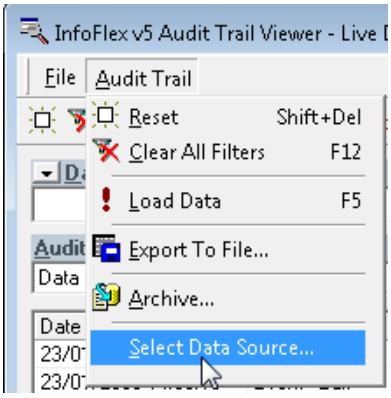
To view archived data it must exist in the current database (the one to which the viewer is connected). So the process of selecting a different data source to view in the Audit Viewer involves the following steps:

(i) Use the Data Source Manager to select an archive of audit data
(ii) Import the archive into the current database if necessary
(iii) Select the imported archive to be the audit viewer's source data.

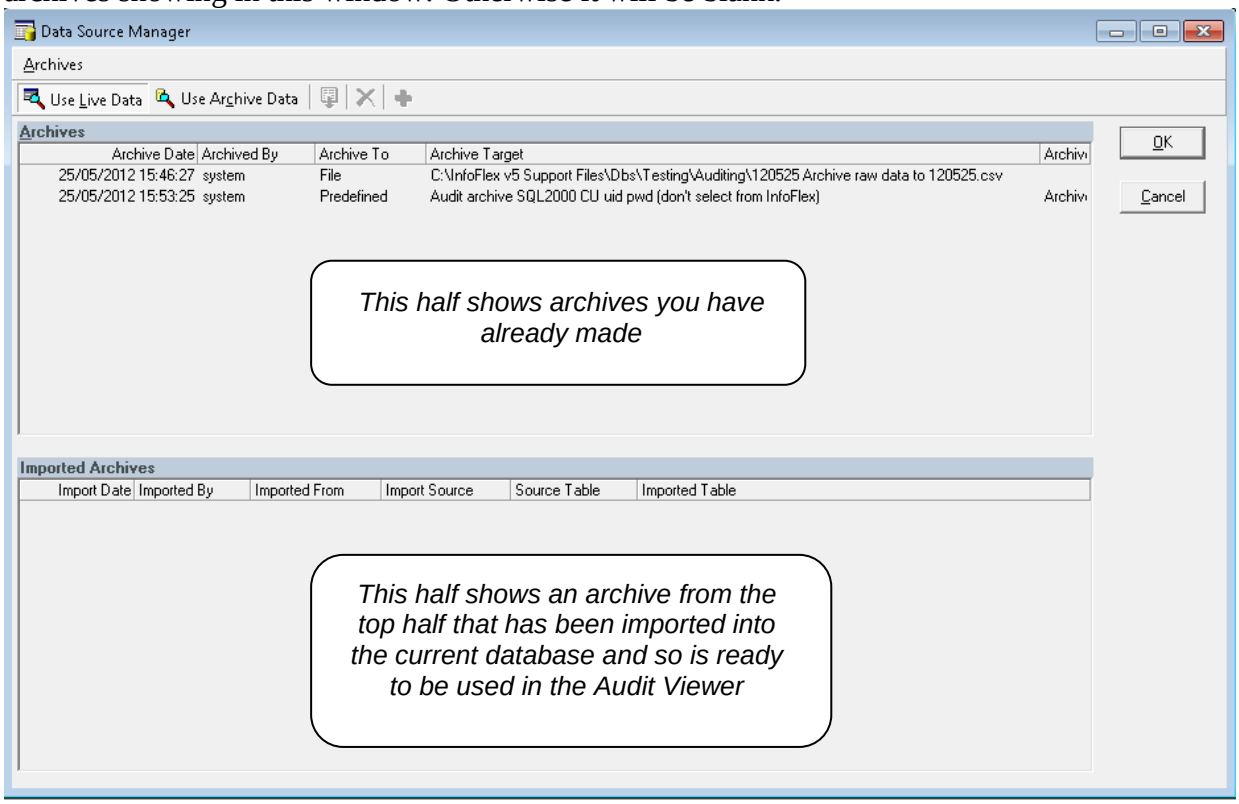
Once an archive has been imported into the current database, there is no need to do it again. It will be always available.

The Data Source Manager manages archived data sources. It lists every archived data source, enables the source to be imported if necessary, and allows users to select a source to view in the Audit Viewer.

To open the Data Source Manager, **Select Data Source...** from the Audit Trail menu.



This will show the **Data Source Manager**. If you have already archived some data using 5.50.0100 or later, or manually added some archives, performed an archive of data, then there will be some archives showing in this window. Otherwise it will be blank.


Data Source Manager
Archives
Use Live Data
Use Archive Data
Archives
Archive Date
Archived By
Archive To
Archive Target
25/05/2012 15:46:27 system File C:\InfoFlex v5 Support Files\Dbs\Testing\Auditing\120525 Archive raw data to 120525.csv
25/05/2012 15:53:25 system Predefined Audit archive SQL2000 CU uid pwd (don't select from InfoFlex)
OK
Cancel
This half shows archives you have already made
Imported Archives
Import Date
Imported By
Imported From
Import Source
Source Table
Imported Table
This half shows an archive from the top half that has been imported into the current database and so is ready to be used in the Audit Viewer

The window shows two grids. The upper grid shows archives made from Audit viewer since 5.50.0100 and any archives made in previous version that have been manually added to this grid. In order to view these archives they must be imported into the current database (except for archives made directly into the current database).

The lower grid shows archives imported into the current database from the external archives in the top half. The exception is if you have made an archive directly into the current database. It will be shown in the top half, but does not need to be imported into the current database, so does not need a corresponding line in the bottom half. Highlighting and colour coding links the archives in the top half to the bottom half.

To use one of the archives, you must first indicate that you want to stop using the Live Audit data in the Audit Viewer and start using the Archived data by pressing the toolbar button **Use Archive Data**. This will allow you to start using the archives.

In summary, the process for viewing archived data is to select your archive in the Data Source Manager, import it into the database if necessary and use the Audit Viewer as normal on this archive.

1. **Select your archive:** The Archives list shows archives made using 5.50.0100 or later, and any additional archives that you have added manually. If the archive you wish to view is not present you need to add it to the list manually.

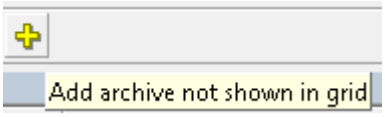
2. **Import your archive**: unless your archive shows [Current Database] in the Archived column it needs to be imported. If it has already been imported, a corresponding colour-coded row is shown in the Imported Archives half of the dialog. (See below for details).
3. **Use the Audit viewer to view the archive:** Once you have ensured that your archive is selected in the list of Archives and has been imported if necessary, press the OK button to view the archive in the Audit viewer.

All the archives that you have added to the list and imported into the database will still be available next time you wish to use them.

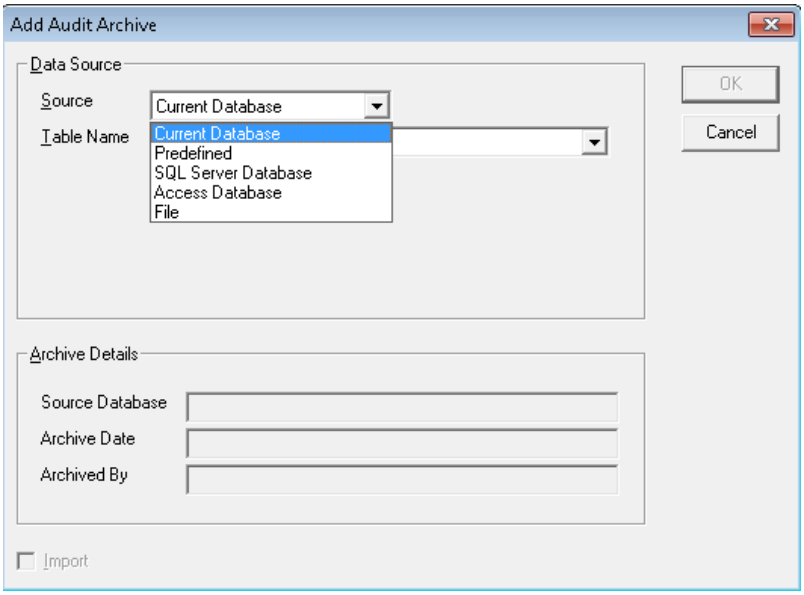
If you want to go back to viewing live Audit data then open the Data Source Manager and select the **Use Live Data** toolbar button, and press OK to return to the Audit Viewer.

10.8.2 Adding Archives made in earlier versions.

To add an archive you have created previously that is not currently showing in the top half of the window, press the **+** button on the toolbar.



This will bring up a window that allows you to identify your archive in an InfoFlex database, or other SQL Server database, access database or file.

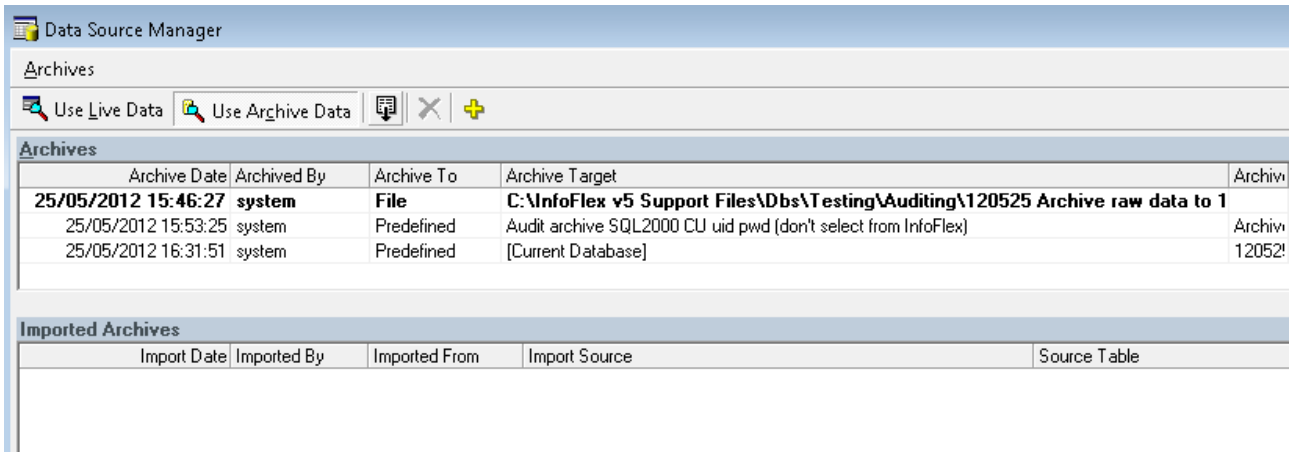


Select a source and complete the related details. If you select a database as your source, you need to select the table name into which you archived the data. If there are archive details available, then they will be shown, although this is not always possible.

If you uncheck the **Import** checkbox, you will simply identify the archive in the top half of the Data Source Manager. If you leave the **Import** checkbox ticked, you will import the archive to a table in the current database in the same step as identifying the archive.

Select **OK** to bring the archive into the Data Source Manager.

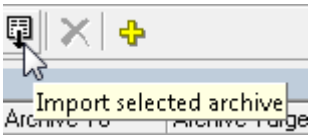
10.8.3 Importing External archives.



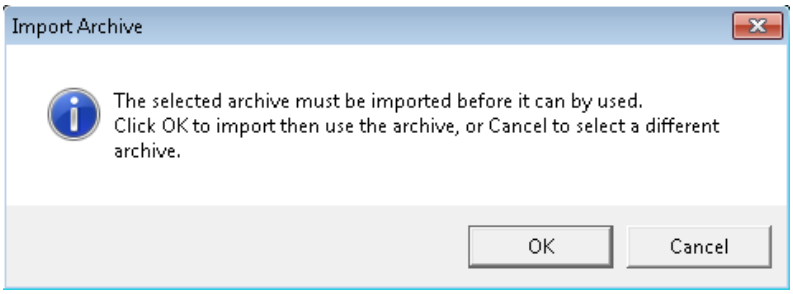
If the archive in the top half of the grid has **[current database]** as the target then it does not need to be imported. Simply selecting and pressing the **OK** button will switch the Audit viewer to using this archive.

If the archive is in another database or file, then you need to import it into the current database. If this is the case, you will see the archive in the top half of the screen, but it will not have a corresponding row with the same colour in the bottom half of the screen.

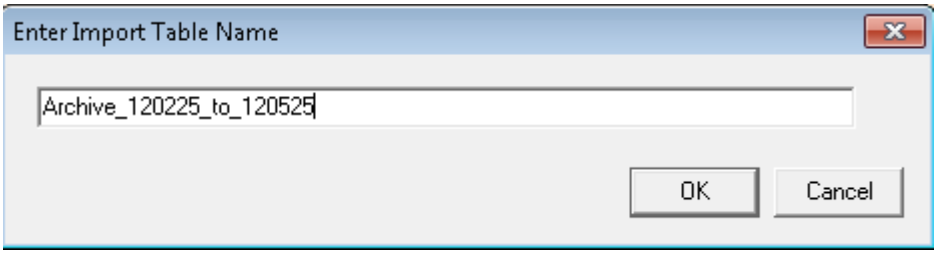
Select the archive you want so that is shows in bold, then press the **Import selected archive** button.



Alternatively you can just press the **OK** button to view the data, and a message will tell you that you need to import the selected archive.

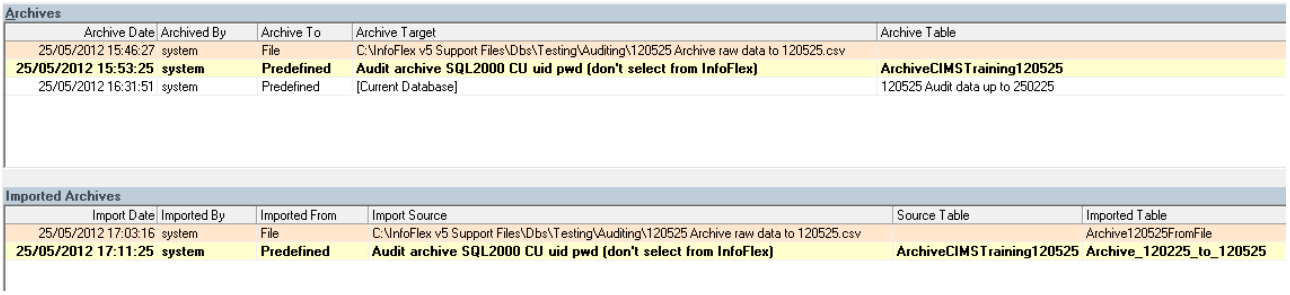

Import Archive
The selected archive must be imported before it can by used.
Click OK to import then use the archive, or Cancel to select a different archive.
OK
Cancel

You will need to name the table into which you are importing according to SQL or Access rules (depending on which type of database you are using). It is also worthwhile thinking up a sensible naming scheme to follow so that you can easily identify your archives. If you enter an existing table name, that table will be overwritten with the archive you import, however you will be prompted to continue or cancel before the table is overwritten.



Press **OK**, a message will tell you how many records were imported.

The archive you have just imported is listed in the Imported Archives list and is linked to the external archive using colour coding and highlighting in the Data Source Manager.

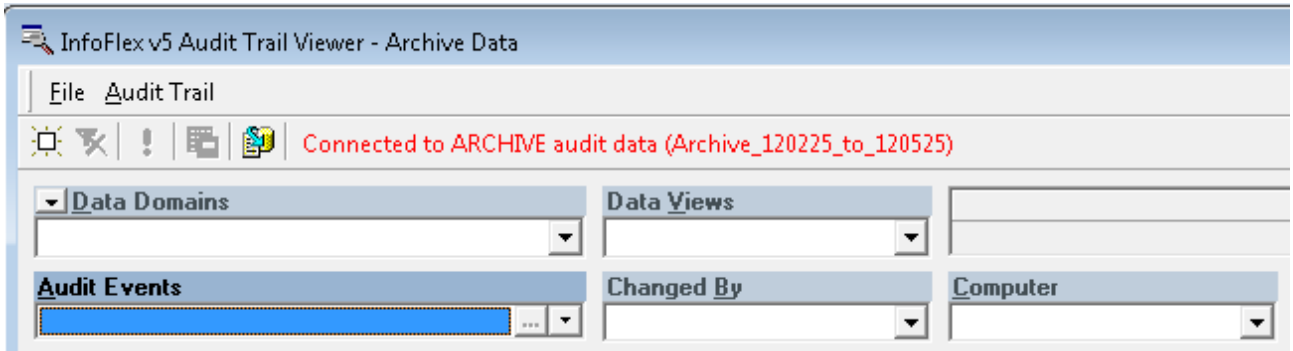

Archives
Archive Date | Archived By | Archive To | Archive Target | Archive Table
25/05/2012 15:46:27 | system | File | C:\InfoFlex v5 Support Files\Dbs\Testing\Auditing\120525 Archive raw data to 120525.csv |
25/05/2012 15:53:25 | system | Predefined | Audit archive SQL2000 CU uid pwd (don't select from InfoFlex) | ArchiveCIMSTraining120525
25/05/2012 16:31:51 | system | Predefined | [Current Database] | 120525 Audit data up to 250225
Imported Archives
Import Date | Imported By | Imported From | Import Source | Source Table | Imported Table
25/05/2012 17:03:16 | system | File | C:\InfoFlex v5 Support Files\Dbs\Testing\Auditing\120525 Archive raw data to 120525.csv | | Archive120525FromFile
25/05/2012 17:11:25 | system | Predefined | Audit archive SQL2000 CU uid pwd (don't select from InfoFlex) | ArchiveCIMSTraining120525 | Archive_120225_to_120525

10.8.4 Select and Viewing an archived data source

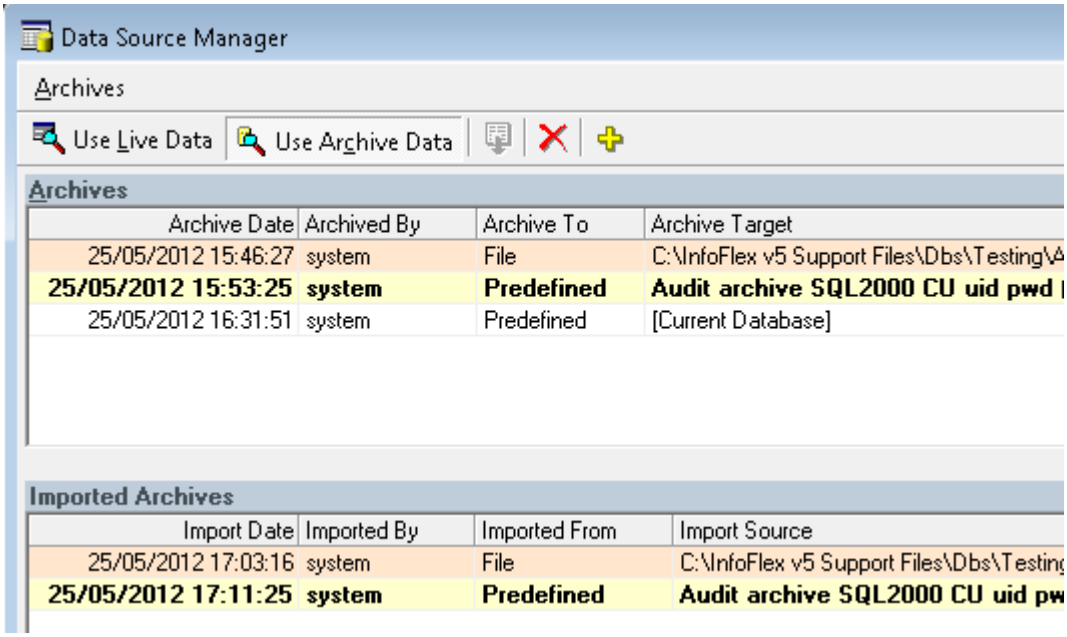
To view an archived data source in the audit viewer, ensure the source is listed in the Archives list, and if necessary has been imported and so has a corresponding entry in the Imported Archives list. Select the archive you wish to view

The selected archive is the one in bold. The link between the external archive and the one in the current database is shown by the same background colour.

Select the imported archive and press the **OK** button to close the Data Source Manager and switch the Audit Viewer to using that archive. The red text next to the toolbar will indicate that archived data is being used.



To change source data again, choose **Select Data Source...** from the Audit Trail menu, and you will be taken back to the Data Source manager. It will show the selected archive in bold.



Choose **Use Live Data** and press **OK** to return to using live data in the Audit Viewer. Or choose one of the other Imported archives, or an archive already in the current database and press **OK** to change archive viewed.

10.8.5 Deleting Archives

You can delete the imported archives in the Data Source Manager. Select the row in the grid and use the right button menu, or select the delete toolbar button.

The table holding the archive will be dropped from the current database, and the line will be deleted from the grid. Note that external archives will not be deleted.

10.9 Viewing data from Merged Subjects

In order to allow the audit viewer to show data from merged subjects, a utility is required to run on the database to create a look-up table of all the merged subjects. This utility is called **IfxDbMergesUpdate.exe** and it should be run once per database. Subsequently any further merges will automatically add to the lookup table and not require the utility to be used again.

Once the utility is run, audit data will show data from the source and target subjects as well as the data post-merge. The identifiers used for the subject will be the post-merge ones (i.e. the target subject).

10.10 Viewing calculation refreshes

Audits of calculation refreshes must be viewed in the audit table. It is not currently possible to view the audits in the audit viewer.

Audit table columns

Two audit events are written for each refresh. A "refresh start" audit is logged with Audit Type 25, and a "refresh end" audit is logged with Audit Type 26. The data audited differs slightly between Design Mgt and IfxBatchProcess.

For Design Management audits, the Key0 column shows the start or end time, Key1 shows the module from which the refresh was initiated. Key2 for end audits only shows the start time. The NewValue column lists the items updated.

For Batch Processes, the Key0 column shows the start or end time, Key1 shows the module from which the refresh was initiated. Key2 is not used. The NewValue column shows the process and the profile name.

10.11 Audit Trail Exercises

The following exercise use the CIMS Audit Training database and some specially-created archives that have been created in .csv files. The .csv files are installed in **c:\Infoflex v5\Data\Audit files** when the training database is installed.

10.11.1 Audit Viewer Add-In and System Policies

Log into the **CIMS Audit Training database** (username = system, password = manager) using InfoFlex and go to **User Management**.

Open the Add-In manager and select the **Audit Viewer Add-In**.

Review the User Permissions that have been set. Only the users listed here will be able to use the Audit Viewer.

Close the Add-In manager.

Go to the **Security** menu and choose **Policies**.

Select the **System** policy and double click the **Auditing** policy.

Review the events that are being audited.

Cancel and then close the Security Settings.

Close InfoFlex.

10.11.2 Audit Viewer

Open the Audit Viewer by running the **IfxAuditViewer.exe**.

Login to the CIMS Audit Training database.
Use the **training** username (username = training, password = training).
You should be denied access because the training username has not been added to the permissions for the Audit Viewer Add-In.

Login using the **system** username (username = system, password = manager).

In the Audit Viewer, in the **Audit Events** dropdown select **Data Entry – data changes**.

Press the button on the toolbar.

Review the data.

In the **Data Domains** dropdown select the **Clinical Domain** and press the button.
Notice how the column headings change to become more meaningful and the subject data is now displayed.

Try using the **Changed By**, **Computer** and patient filters.

In the **Audit Events** dropdown, press the ... button and change which audit events are displayed. See how the data is affected.

In the **Audit Events** dropdown, select **Data Entry – subject changes**, and then press the ! button. Press the ... button and change which audit events are displayed.

In the **Audit Events** dropdown, select **Account usage**, and then press the ! button. Press the ... button and change which audit events are displayed.

10.11.3 Data Source Manager

In the Audit Viewer, notice that the red text on the toolbar indicates that the viewer is **Connected to LIVE audit data**. This means that the viewer is showing the current live audit data in the InfoFlex database.

Go to the **Audit Trail** menu and choose **Select Data Source**.

Press the **Use Archive Data** button.
There are six rows in the upper grid, indicating the six archives of audit data have been created using InfoFlex 5.50.0100 or later.
The coloured backgrounds on three of the archives indicate that those archives have been imported into tables in the current database and are available to be viewed.

Viewing an archive that has already been imported into the database

Select a coloured row in the upper grid. Notice that it turns bold, and the corresponding row in the lower grid also turns bold. The lower grid shows the name of the table that each archive has been imported into.
With one of the coloured rows selected, press **OK**.
The Data Source Manager closes and the red text on the toolbar of the Audit Viewer now shows **Connected to ARCHIVE audit data** and the name of the table containing the archive.

Select an audit event and a data domain then press the ! button. Review the data.

Importing an archive without viewing it

Open the Data Source Manager again (go to the **Audit Trail** menu and choose **Select Data Source**).

Select one of the white rows in the upper grid. These rows represent archives that have been made but that have not been imported into the database yet. There is no corresponding row in the lower grid.
Right click the row and choose **Import**. Enter a table name. For this exercise, use the prefix **Audit_Archive_** and then the date of the audit file.
Press **OK**.
The records are imported and the archive is shown in the lower grid. The upper and lower grid rows are colour coded.
To view the records in the audit viewer, press **OK**.

Importing and Viewing an archive

Open the Data Source Manager again (go to the **Audit Trail** menu and choose **Select Data Source**).

Select one of the white rows in the upper grid. Press **OK**. The archive will be imported, then the Data Source Manager will automatically close and show the data in the audit viewer.
Read the prompt message then press **OK**.
Enter a table name and press OK.
The records are imported into the table and a prompt message is displayed.
Press **OK** on the prompt message. The Data Source Manager closes automatically and the Audit viewer displays that archive.
Review the data.

Adding archives that are not listed in the upper grid

Archives made using InfoFlex versions prior to 5.50.0100 are not listed in the upper grid.
To add an archive made in an earlier version, press the on the Data Source Manager toolbar.

In the **Source** dropdown, select **File**. In the File field navigate to **C:\Infoflex v5\Data\Audit files** and select one of the pre 5.50.0200 files. Press **Open**.
Untick the **Import** check box. This means that the archive will be listed in the upper grid but will not be imported into the database.
Press **OK**.
The archive is shown in the upper grid with a white background. The archive can be imported at a later date.

Press the on the Data Source Manager toolbar again.
In the **Source** dropdown, select **File**. In the **File** field navigate to **C:\Infoflex v5\Data\Audit files** and select another one of the pre 5.50.0200 files. Press **Open**.
Leave the **Import** check box ticked. Press **OK** and enter the table name to import the archive into.
Notice that the archive is already showing in the upper grid in bold.
Press **OK**.
The archive now has a coloured background in the upper grid and there is a corresponding row in the lower grid.
Press **OK** and view this data in the **Audit Viewer**.